



Loudoun County Virginia

DEPARTMENT OF
CONSTRUCTION & WASTE
MANAGEMENT

LOVETTSVILLE
COMMUNITY CENTER

PROGRAM OF
REQUIREMENTS

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Executive Summary

The Department of Construction & Waste Management (DCWM), Loudoun County commissioned the design team lead by LSY to perform an assessment survey of the existing building and site conditions and identifies building constraints that may impact future building with the impact on the proposed site. The study comprised of architects and civil, structural, mechanical and electrical engineers. A hazardous materials survey of the building was also conducted.

A conditions assessment report was produced as a result of the survey. It concluded that it is possible to correct the deficiencies in the building and surrounding site. A renovation of this magnitude is likely to be expensive in relationship to the size and value of the existing property. The document further states:

“A renovated community center will, by its nature, result in many functional compromises that would not be necessary in a new building. For this reason, the study team recommends developing one or more new building concepts in addition to a renovation concept to allow Loudoun County to compare the efficacy of a renovation strategy against a new building strategy.”

The Program of Requirements responds to the assessment report issued by providing three design concepts to meet the requirements of DCWN, Loudoun County's SOW and the assessment survey outlined below:

1. Renovation of the existing community center and upgrading core components of the existing building uses and utilities that address the deficiencies outlined in the survey. The design team provided two design options that focus on a renovated community center.
2. Design new community center and place the structure on the present site. The community center will meet the current use requirements of the existing one.



Project Overview

1.0 Background

The Lovettsville Community Center is a multipurpose county facility that provides recreational and community services to the Town of Lovettsville. Activities and programs include a wide range of children's activities including a preschool and daycare program for 3 – 5 year olds, before and after school programs, and recreational programs. Adult programs include instructional and recreational programs, availability of meeting spaces and event facility rental opportunities. Special events are conducted at the center and include dances, festivals, and other celebratory events. General recreational facilities include an indoor gymnasium, a community pool, lighted tennis courts, outdoor basketball courts, and a baseball field. A large playground supports the preschool and daycare programs and is available for general community use.

1.1 Objectives

The following are objectives for upgrading the community center infrastructure and site:

- Upgrade building to meet handicap accessibility.
- Provide adequate parking to support community center and seasonal parking for swim meets.
- Improve ventilation with new roof top units
- Replace plumbing fixtures to enhance water consumption in facility.
- Provide fire suppression system for entire building
- Abate hazardous materials, asbestos and lead paint, throughout building.
- Repair water damage and mitigation to exterior walls.
- Provide two different preliminary design concepts and cost options.

2.0 Existing Building Renovation – Option 1

2.1 Site Requirements

2.2.1 Grading:

The concept grading for the renovation option attempts to mimic natural drainage divides and balance earthwork. Although a fill required plan is provided, this could be refined to a near balance condition once pavement and concrete thickness as well as fine grading is considered in final design. The plan maintains gentle slopes near the main entrance to support the proposed handicap spaces and access. The parking configuration on the west side of the building will generally remain the same but the grades will be lower than existing.



This will help produce cut for the additional parking lot in the existing ball field area. This will also allow the slopes to be relaxed to 6-7% rather than the existing 9-10% which will provide a safer parking area. An average cross slope of 5% is used across the parking lot expansion to the north. This provides a safe, usable parking lot but also allows the proposed grades to tie back to existing grades without the use of retaining walls. The multi-use grass area is graded with a 2% slope to provide positive drainage to the stormwater management feature but also be a usable space for the community center.

The earthwork summary is as follows:

Cut	2600	cubic yards	10% removed for undesirables
Fill	5200	cubic yards	10% added for compaction
Net	2600	cubic yards	Fill needed b/c of the parking lot in the existing field area

2.2.2 Site Parking:

County code requires one parking space for every four people according to occupancy. The occupancy per code is 554 but once administrative staff of 11 is removed then the occupancy number is 543. Fifteen spaces are required for staff and three spaces are required for the neighbor. This yields a total required number of spaces as 154. A total of 154 parking spaces are provided throughout the site. Fifteen can be designated for staff, three dedicated spaces can remain for the neighbor near their existing location, and four handicapped-accessible spaces are provided near the main entrance. The remaining 132 spaces can be unassigned for general visitors.

2.2.3 Stormwater Management:

The stormwater management facility shown is intended to be an enhanced extended-detention pond to provide treatment for all disturbed areas within the project. An enhanced extended-detention basin has a higher efficiency than an extended-detention basin because it incorporates a shallow marsh with landscaping in its bottom. The shallow marsh provides additional pollutant removal through wetland plant uptake, absorption, physical filtration, and decomposition. The shallow marsh vegetation also helps to reduce the re-suspension of settled pollutants by trapping them. It is also noted that the project intends to achieve a LEED silver certification. This facility can be refined in final design to ensure that LEED credits are achieved for site quantity and/ or quality treatment. The current size of the facility is based on the assumption that all paving is impervious. If a pervious pavement option is preferred, the stormwater management facility could be reduced to expand the multi-use grass area.

2.2.4 Basketball Court:

The relocated asphalt basketball court is shown to the north of the existing tennis courts to remain. This provides adequate space for the new parking



configuration but also maintains the theme of the community center amenities which are around the perimeter of the site.

2.2 Architectural Requirements

2.2.1 Building Envelope:

The existing building has three new additions strategically placed to enhance the use and flow of the building. One addition is at the front and the other two are near the back of the building.

The first addition is the largest and will give a public face to the facility. This centralizing lobby will alleviate confusion generated by the two former lobbies. Removal of the existing metal clad stoop and columns along with partial demolition in the segregated lobbies will create a unified public space. The single story lobby with high ceilings will be enclosed with a curved curtain wall with glazing. The lobby will allow natural light to enter the building. The curtain wall will incorporate solar shading to alleviate heat gain in the summer months.

The additions of ADA accessible toilets and storage rooms adjacent to rooms 4 and 5 require a small addition to on the North West side of the building. This two story addition will have a smaller scale in height as to not disturb the proportions of the existing 1940 building. The brick color and coursing for the new addition will match the existing building.

The final addition comes on the east side of the gym. A single story storage room with access to the gym has been added to accommodate existing tumbling equipment, tables and chairs that currently occupy half the gym. Adjacent to the storage room will be a pump room designated for the geothermal mechanical system, if this system is selected for the building.

The original 1940 building walls have several brick and plaster infills from previous window opening in Rooms 2, 3, 4 and 5 added during an earlier renovation. These will be removed. Openings will be filled with new double paned, fixed, low-e argon filled windows. All windows in the existing building will be removed and replaced with new efficient windows.

Several courses of masonry at the north facade of the gym will be removed and replaced at the head of the proscenium opening. Flashing systems to be repaired and replaced if necessary. Other minor work to the exterior includes pointing brick, replace sealant and expansion joint between additions and repairing failed hand rails and surface coating at concrete stairs.

Roof: The existing roof appears to be in good condition, however, due to the age of the roof and significant amount of roof patches it is recommended that the worn built-up roof membrane be replaced with a new single ply system. A TPO single ply membrane system will be provided for new roofing additions.

2.2.2 Interior Modifications:

Per the hazardous material survey conducted during the feasibility study all surfaces in areas with hazardous materials, lead paint and asbestos underlying floor mastics associated with vinyl flooring materials, will be abated. Lead paint in



wainscot, door trim and plaster walls will also be removed completely. All disturbed areas will get new finishes equivalent to what was removed.

The administration area will be relocated to the main entry level for better visibility and control of entry. The admin area will accommodate four work stations, a common work area and a reception desk. A private administration office will be provided in lieu of the work room.

As part of the upgrade each classroom will now have access to a single ADA accessible toilet. New men's and women's toilets will be added to the upper level. Toilet room layouts on the lower level adjacent to the gym will remain as currently designed. However, new more efficient fixtures will replace these old antiquated ones.

Insulation will be added to the inside of the exterior walls to meet a thermal resistance of R-19. The walls will be furred out to include insulation, vapor barrier and gypsum wall board.

ADA compliant door hardware will be provided for better accessibility to existing doors selected to remain.

Finishes: All VCT tile flooring, walls and ceilings including tile and grid will be completely updated throughout the building. Toilets on the main level will receive ceramic tile on walls and floor. Wood floors in Rooms 2 and 4 will be patched, repaired and refinished. Water and moisture resistant materials will be provided in toilets, kitchen and janitors closet.

The outdated kitchen will be modernized by removing the existing base & wall cabinets and appliances. Replacement cabinets and commercial grade appliances will be added and reorganized for better efficiency. An exhaust vent will be added above the stove. A three bowl stainless steel sink and work surfaces will be added for food preparation.

The storage room adjacent to the kitchen and below the main level will be finished with flooring and lighting. This area could be converted to accommodate a fire pump room.

2.2.3 Accessibility:

A hole-less hydraulic, three stop, 2-sided elevator is to be added to address the lack of accessibility to the existing building levels. All existing stairs will be removed or modified throughout the building. A steel structure supported from the existing ceiling will be added between Rooms 2 and 4. Room 6 will be accessed from the new structure. Openings in the existing building will be provided to accommodate the 48" wide balcony. A machine room to support the elevator will likely be placed close to the elevator.

2.2.4 Program (Option 1):



Option 1 Room Name	Size	Quantity	Total NSF
Main Level			
Room #1	632	1	632
Room #2	647	1	647
Room #4	646	1	646
Room #6	551	1	551
Administration	471	1	471
Work Rm/Office	150	1	150
Lobby	1,737	1	1,737
Vestibule	73	2	146
Men's	185	1	185
Women's	149	1	149
Single ADA Toilet	50.5	4	202
Storage Room	93	1	93
Corridor/Circulation	724	1	724
Elevator	75	1	75
Electrical Room	150	1	150
Data Room	78	1	78
Total			6,636
Lower level			
Room #3	1,083	1	1083
Room #5	657	1	657
Closet	61.5	2	123
Gym	4,563	1	4,563
Kitchen	329	1	329
Janitor	24	1	24
Men's	114	1	114
Women's	134	1	134
Single ADA Toilet	44.5	2	89
Corridor/Circulation	323	1	323
Elevator	75	1	75
Machine Room	58	1	58
Pump Room	108	1	108
Storage Room	336.5	2	673
Total			8,353
Grand Total			14,989

2.3 Mechanical Requirements

General overview: The community center renovation options and new building option were designed around the premise of three mechanical system options; 1) VAV System, 2) Geothermal System and 3) VRF system. The DCWN will decide which mechanical system is best suited for the community center. Information in this section applies to Design Options 1A and Option 2 (Sections 3.0 & 4.0 respectively). The systems are designed with energy and water efficiency in mind, to meet the requirements for LEED "Silver" certification.

**2.3.1 Codes and Standards:**

The engineering calculations are based on the latest recommendations of ASHRAE and good engineering practices consistent with industry standards. The codes applicable to the design are as follows:

- 2009 Virginia Uniform Statewide Building Code
- 2009 International Building Code
- 2009 International Mechanical Code
- 2009 International Plumbing Code
- 2009 International Energy Conservation Code
- USGBC - LEED 2009
- American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) handbooks; 2005 Fundamentals, 2006 Refrigeration, 2007 HVAC Applications, 2008 HVAC Systems & Equipment.
- ASHRAE Standard 90.1-2009 Energy Standard for Buildings except Low-Rise Residential Buildings.
- ASHRAE Standard 62.1-2007 Ventilation for Acceptable Indoor Air Quality.
- ASHRAE Standard 55-2004 Thermal Environmental Conditions for Human Occupancy
- Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

2.3.2 Design Conditions:

The air-conditioning system will be designed to maintain the following inside conditions in tenant and public areas:

Summer: 75°F and 50% RH.

Winter: 72°F. Humidification will not be provided. Winter RH is not expected to be lower than 20 percent.

Noise: in class rooms the proposed mechanical system design shall maintain noise level between NC 25-35. Other areas in the building shall be designed to maintain noise level be NC 35-40. It is expected that this range will be exceeded immediately adjacent to mechanical rooms or below roof top A/C units.

2.3.3 Variable Air Volume Air Conditioning DX Rooftop Units (Baseline System Option #1):

The baseline system for the classrooms and all supporting administrative areas will be air-conditioned by an industrial quality, variable air volume (VAV) rooftop mounted units. The new rooftop units shall have anticipated Energy Efficiency Ratio of approximately EER-12. Each rooftop unit shall be furnished with supply



fan, exhaust fan, DX cooling Coil, electric pre-heating coil, two media filters system (MERV-8 and MERV-14), variable speed fans (VFD's) on the supply and exhaust fans and new communication card that will interact with the new energy management system. This will allow the units to perform energy efficient sequences like optimum start and stop controls, Night Purge Control Sequence and demand control ventilation.

2.3.4 Geothermal Variable Air Volume Air Conditioning Heat Pump Roof Unit (Option #2):

Option #2 system for the classrooms and all supporting administrative areas will be air-conditioned by an industrial quality, heat pump variable air volume (VAV) rooftop mounted units. The new rooftop units shall have anticipated Energy Efficiency Ratio of approximately EER-15. Each rooftop unit shall be furnished with supply fan, exhaust fan, DX cooling Coil, electric pre-heating coil, two media filters system (MERV-8 and MERV-14), variable speed fans (VFD's) on the supply and exhaust fans and new communication card that will interact with the new energy management system. This will allow the units to perform energy efficient sequences like optimum start and stop controls, Night Purge Control Sequence and demand control ventilation.

2.3.5 Common for Both Systems (Option #1 & #2):

Each zone shall have its own fan powered terminals unit (pressure independent), with electric heating coils. Air will be supplied to the spaces through 4 foot long linear slot diffusers or 2x2 perforated face diffusers distributing airflow evenly. Air will return through light fixtures. Where light fixture return capacity is not adequate, perforated face return grilles capacity will be provided. The lobby will be conditioned by a packaged, constant volume air conditioning rooftop unit. Heat will be provided by a main electric heating coil at the unit and electric duct booster heaters in ducts supplying air to the entrance areas if required. Gym area will be served by two constant volume rooftop units. Toilet rooms: Roof mounted fans will be used for toilet room exhaust.

2.3.6 Variable Refrigerant Flow (VRF-System) – (Option #3):

The proposed system is a variable refrigerant volume (VRV) system utilizing a dedicated outside air unit (DOAU) to provide ventilation air to each individual space. The DOAS units will be mounted on the roof (refer to the attached drawings for proposed location). The DOAS unit will be equipped with MERV-8 and MERV-14 filter section, pre-heating coil, direct expansion coil (DX) utilizing digital scroll compressors for cooling and dehumidifying the air prior serving the VRF units located on each floor and fan wall system utilizing multiple supply air fans that will allow complete redundancy, energy efficient and reduce cost maintenance. The outdoor air will be ducted to individual VRF units throughout each space to meet ventilation requirements.

Heating and cooling for each individual space will be provided through the use of the VRV system. The system is similar to a standard split system Air Conditioning system which is comprised of an outside condensing unit with compressors and



condensing capability piped to an inside evaporator coil. The VRF system has a unique refrigeration design that allows multiple indoor evaporator coils to be piped to a single outdoor condensing system with heat pump capabilities. The ability of this system to do simultaneous heating and cooling results in a very energy efficient operation. Separate zones have been created that will each be served by their own dedicated medium static VRV box which will be concealed within the ceiling plenum and ducted directly to supply diffusers. The VRV system will also utilize branch selector boxes which enable different zones within the building to be in heating or cooling mode regardless of the mode of the adjacent branch.

2.3.6.1 VRF System:

The following is a summary of the major components of the VRF system. Three (3) outdoor condensing units with individual refrigerant piping systems to fan coil units within the building. Horizontal concealed DX /fan coil units located above the ceilings. Each unit will be ducted with supply and return duct to its respective zone. There are multiple manufacturers that can be considered and can be evaluated upon project. Dedicated 100% outside air units will be provide the required ventilation air. The units will be roof mounted in the area designated on the drawings. Each unit will have MERV-8 and MERV-14 filter section, pre-heating coil, direct expansion coil (DX) utilizing digital scroll compressors for cooling and dehumidifying fan wall system for air delivery, an enthalpy wheel for heat recovery between the exhaust and outside airstreams.

2.3.6.2 Building Automation System (BAS):

The primary method of control and monitoring for the mechanical systems will be BACnet compliant Direct Digital Control (DDC) system which can be also accessible via Web browser interface. The BACnet communication will feature high speed Ethernet network over the system DDC controllers to assure fast and reliable communication of data.

2.3.7 Building Automation Systems (for all options):

The building energy management automation system (EMS) will be controlling all new rooftop units and exhaust fans through a single, integrated system. In addition other features can be incorporated in to the EMS and programmed and managed by the EMS system like variable air volume (VAV) box and terminal fan power box monitoring and controls, lighting controls, building operational schedules and monitoring energy consumption.

The EMS system consists of building control units or communication or control panels and PC Workstations that use Bacnet/IP or other compatible software. The control panel will provide centralized building control through communication to building equipment, such as heating, ventilating, and air-conditioning (HVAC) equipment. A building operator uses a PC Workstation and/or the operator display (touch screen) on the control panel to perform system operator tasks. The PC Workstation communicates to the control panel over an Ethernet network. Remote access to the system is available using either a modem in the control panel or an Internet connection with the energy management system.

Most of the listed items below have a corresponding controls component required to get the most effective return on the upfront investment. Each item includes the



programming to the building controls to make the proposed recommendation effective. The following is our recommendations.

2.3.7.1 Option Start and Stop Control Sequence:

Optimum start and stop is a control strategy that leverages the thermal capacity of the building to reduce the hours of equipment operation. Lightly constructed, light weight concrete or pre-fabricated concrete panel buildings respond more quickly to the operation of an HVAC system rather than buildings constructed of denser materials such as brick. Knowing how quickly the target temperature in the space can be achieved allows one to minimize the length of time that the HVAC system operates before the occupied period begins. Starting the equipment as late (and stopping it as early) as possible, based on scheduled occupancy, ambient conditions, and the thermal characteristics of the building, can yield significant energy savings without sacrificing comfort. (Refer to Figure-1)

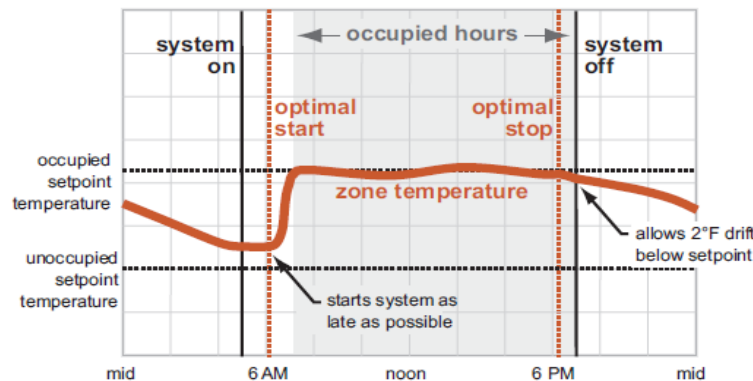


Figure -1: Optimal Start and optimal stop

2.3.7.2 Night Purge Control Sequence:

Unoccupied ventilation can serve as an effective tool to improve the indoor-air quality by flushing many indoor contaminants from the building. This practice introduces large quantities of outdoor air to purge stale air from the building without increasing the cooling load. In climates with cool nighttime temperatures, this control strategy can also reduce utility costs by taking advantage of the thermal capacity of the building. When the nighttime temperature outside reaches a predefined value, the control system activates the supply fan and opens the outdoor-air damper to introduce outdoor air directly into the building. The fans remain on until the space temperature falls to a specified level. In effect, the cool air brought into the building at night reduces or eliminates the morning pull-down load that often develops in a building during the cooling season. (Refer to Figure-2)

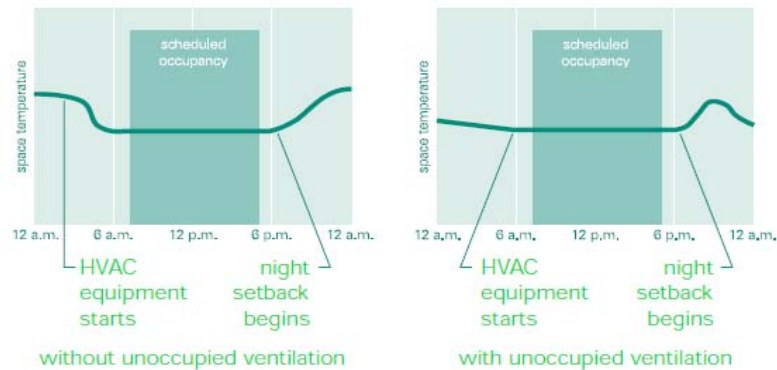


Figure -2: Effect of unoccupied ventilation on space temperature

2.3.7.3 Demand Control Ventilation Sequence

Carbon Dioxide (CO₂) based Demand Controlled Ventilation (DCV) is a control strategy to vary the amount of ventilation outside air delivered to a space based on input from a carbon dioxide sensor located in the main return air path on every floor back to each rooftop unit, which is representative of the quantity of occupants within the space. This provides a precise and appropriate amount of outside air to the space based on actual occupant density, as opposed to a constant outside air amount based on the design occupancy of the space. (Refer to Figure-3)

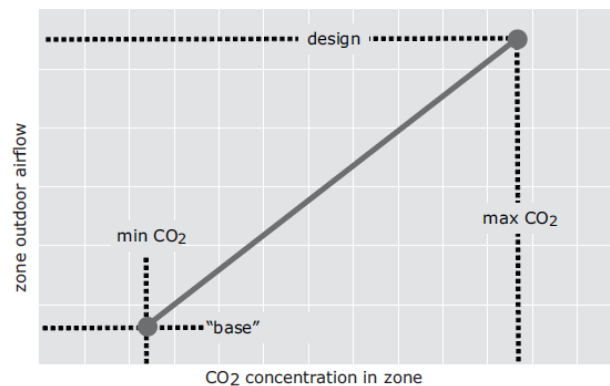


Figure -3: Varying outdoor concentration level based on measured CO₂ concentration.

3.2.7.4 Supply Air Temperature Reset:

Supply air temperature reset is a control scheme that allows an airside system to modulate the supply air temperature based on outside air temperature, worst-case room demand, or a combination of the two. When enabled, the temperature of supply air is increased, which allows for reduced compressor energy or reheat energy, but also increases fan energy in a VAV system. When supply air temperature reset is based on outside air temperature, the supply air temperature can be increased as the outside air temperature decreases, allowing for more economizer operation. (Refer to Figure -4)

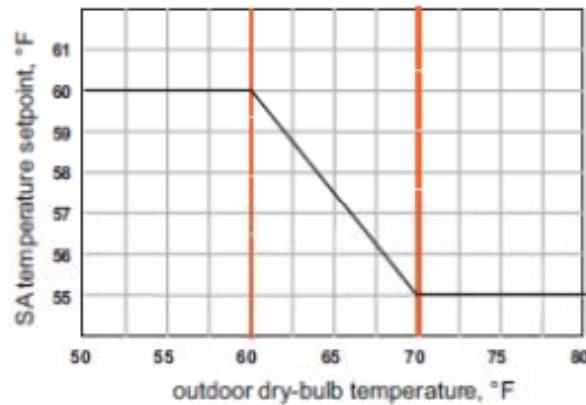


Figure -4: Supply Air Temperature Reset Based on Outside Temperature.

2.3.8 Preliminary Pay Back Analysis:

The payback period is the amount of time it takes the consumer to recover the assumed higher purchase cost of more energy efficient equipment as a result of lower operating costs. Numerically, it is the ratio of the increase in purchase cost to the decrease in annual operating expenditures. This type of calculation is known as a “simple” payback period, because it does not take into account changes in operating cost over time or the time value of money or escalation in fuel cost.

The data inputs to analysis software (TRANE Trace) are the preliminary total installed cost of the equipment to the customer for each efficiency level and the annual (first year) operating costs for each efficiency level. The inputs to the total installed cost are the equipment price and the installation cost. The inputs to the operating costs are the annual energy cost, the annual repair cost, and the annual maintenance cost. The following is the payback period for each option:

Option	Payback Period
Option-1 Variable Volume Rooftop units	6.8 Years
Option-2 Geothermal Variable air volume air conditioning Heat Pump	10.8 Years
Option 3 Variable Refrigerant Flow (VRF System)	8.3 Years

3.2.9 Proposed Equipment Sizes:

Option 1: DX- Rooftop Units

Rooftop unit-1 (VAV System)

Serving Area: Room# (1, 2, 3, 4, 5, 6), Corr's, Admin



Net Capacity: 26 Ton Rooftop Unit.

Rooftop unit-2 (Constant Volume System)

Serving Area: Lobby

Net Capacity: 12 Ton Rooftop Unit.

Rooftop unit-3&4 (Constant Volume System)

Serving Area: Gym

Net Capacity: 11 Ton Rooftop Unit each.

Option 2: Geothermal Heat Pump Rooftop Units

HP Rooftop unit-1 (VAV System)

Serving Area: Room# (1, 2, 3, 4, 5, 6), Corr's, Admin

Net Capacity: 26 Ton Rooftop Unit.

HP Rooftop unit-2 (Constant Volume System)

Serving Area: Lobby

Net Capacity: 12 Ton Rooftop Unit.

HP Rooftop unit-3&4 (Constant Volume System)

Serving Area: Gym

Net Capacity: 11 Ton Rooftop Unit each.

Approximate number of vertical U-Tube well: 60 at a range of 180-250 ft.

Two Base Mounted glyco pumps: 90 GPM @ 130' Head.

Makeup Glyco System.

Piping: TBD

Common to both options:

Roof Exhaust Fans: 8 Fans ranges in size from 100-800 CFM.

Com/ Data Room: 5 Ton DX unit Liebert or APC.

Kitchen: Type - I kitchen Hood with associated exhaust fan.

2.4 Electrical Requirements

Currently the watts per square foot in the classrooms are not compliant with the 2009 energy code. Replacement of all the existing lighting fixtures throughout the building with T5 lamps to reduce the energy consumption is necessary. Individual



spaces within the building shall utilize wall mounted occupancy sensors, with a built in manual override, or ceiling mounted occupancy sensors with an over-ride toggle switch. In addition the lights can have the option to be controlled with a building lighting control system that reduced levels based on available daylight, as well as turns off lights off during nights, weekend and holidays.

A 208V, 1600A, service including new secondary feeders from utility transformer to c/t cabinet in existing electrical room will be provided. A new 1600A switchboard with a 1600A main section and distribution section with two 400A breakers and 4-200A breakers feeding a new 120v/208v, 400A panel and 4 new 120v/208v, 200A panels will be provide in electrical room. New feeds to the new roof top units will be added. Branch circuits will be relocated from 3 existing panels to new panels.

Electrical Room: The current electrical room will be enlarged to house the upgraded utility transformer and primary feeders will be provided. The size will meet an 8'x12' requirement.

Tennis Courts: Six new poles with metal halide fixtures will replace the existing lighting at the tennis courts. These lights will be placed on a timer for nighttime activity.

IT: Additional telephone and data lines will be provided in each of the classrooms and kitchen. The fire alarm will require 2 telephone lines. A 8'x10' IT/Data closet will be provided to accommodation the panels.

Green Power: Alternate green energy will be used to serve certain systems when possible to achieve LEED points.

2.5 Plumbing Requirements

A water service upgrade is required for the existing system. Reduction in water consumption and energy conservation will be considered in all fixture selections. All water closets, lavatories and urinals will be replaced with low flow, pressure assisted, tank type toilets or wall mounted toilet with battery operated flush valves. Child height fixtures will be installed where appropriate. All fixture types for both adults and children will be in compliance with current IBC and IPC.

Faucets: Replace existing water faucets with manual metered faucets or battery sensor operated faucets with 0.5 GMP.

Drinking Fountain: Replace existing drinking fountain with a new electric water cooler, high/low fountain, with a filter system.

Kitchen: Grease interceptors for the kitchen sinks will be provided. A water filtration and check valve will be provided at any beverage dispenser, coffee or ice maker or potable water source that will be consumed by the public.

2.6 Fire Protection Requirements

Currently the existing community center does not have a functioning fire suppression system. There is, however, a small storage room off of the



basement kitchen which is sprinklered. This is a small room compared of the rest of the building.

Fire Suppression System: The building will be provided with a zoned automatic wet piped sprinkler system which will comply with the latest International Building Code (IBC), International Fire Code, and National Fire Protection Association Standards. System requirements will be based on a fire flow test.

Fire Extinguishers: Fire extinguishers will be located in exist access corridors and shall be in accordance with NFPA-10. All fire extinguishers in the corridor will be installed in recessed in cabinets.

Fire Alarm Strobe: One fire alarm strobe will be provided in the gymnasium.

3.0 Existing Building Renovation – Option 1A

General: The bulk of the modifications for Option 1 are very similar if not identical to Option 1A. Specifics that differ from the previous option will be described in greater detail in this section.

3.1 Site Requirements

Civil conditions for Option 1A are the same as indicated above in Option 1 in section 2.1.

3.2 Architectural Requirements

3.2.2 Building Exterior:

For this option the existing building has two new additions. One addition is at the front and the other one is near the back of the building along the northwest side of the gym

In addition to the new lobby addition on the main level this option adds a single story masonry clad addition at the same elevation as the lower level of the building. This addition will be organized to house the service group functions of the building: kitchen, storage, electrical and data rooms. A vestibule will be added for entry from the newly configured parking lot into the gym. The partitions and walls are to be constructed of masonry. Brick color and coursing will match the existing buildings. New concrete slabs shall be of thickness to match existing and be reinforced.

3.2.3 Interior Modifications:

Changes and modifications to the main level are similar in scope to Option 1, with the exception of how support spaces are organized. Rooms #2 and #4 will have direct access to an ADA accessible toilet. Men's and Women's toilets have replaced the existing stairs and support spaces in the original building.

The lower level Men's and Women's toilets have been redesigned to accommodate fixture requirements and ADA accessibility. Structural work in the ceiling space above will be necessary to accommodate the exhaust duct work



supporting the toilets. New ceramic tile, plumbing fixtures, toilet partitions and toilet accessories will be provided. The existing kitchen function has been relocated to the new addition along with the storage which was limiting due to the amount of head room in the space.

Rooms #3 and #5 have both increased in square footage due to the removal of the existing stairs. Room #3 has access to an ADA accessible toilet and additional storage. Both of these rooms have direct access to the outside to address any egress issues.

The commercial kitchen will have access to the outside to accommodate bulk food deliveries and staff use. The routing of the mechanical exhaust will also benefit from the new location of the kitchen. A coiling window for serving will be added between the kitchen and gym. New commercial grade ice maker, freezer and refrigerators for storage of pre-prepared food to be heated and distributed in the classrooms will be provided. A convection oven, stainless steel work surface with structures on which to hand tools overhead and stainless steel three bowl sink are also necessary. Water and moisture resistant finishes will be provided.

3.2.4 Program (Option 1A):



Option 1A Room Name	Size	Quantity	Total NSF
Main Level			
Room #1	632	1	632
Room #2	647	1	647
Room #4	647	1	647
Room #6	625	1	625
Administration	471	1	471
Work Rm/Office	150	1	150
Lobby	1,734	1	1,734
Vestibule	72.5	2	145
Men's	151	1	151
Women's	149	1	149
Single ADA Toilet	47.5	4	190
Storage Room	156	1	156
Roof Access	45	1	45
Elevator	75	1	75
Corridor/Circulation	623	1	623
Total			6,440
Lower level			
Room #3	809	1	809
Room #5	843	1	843
Shower	38	1	38
Gym	4,718	1	4,718
Kitchen	443	1	443
Janitor	45	1	45
Men's	228	1	228
Women's	236	1	236
Single ADA Toilet	46	1	46
Vestibule	165	1	165
Elevator	75	1	75
Machine Room	53	1	53
Pump Room	80	1	80
Storage Room	186.5	2	373
Data Room	90	1	90
Electrical Room	148	1	148
Total			8,390
Grand Total			14,830

3.3 Mechanical Requirements

Mechanical options are the same for Option 1A. Refer to Option 1 section 2.3 for conditions.

3.4 Electrical Requirements

Electrical requirements are the same for Option 1A. Refer to Option 1 Section 2.4 for conditions.

3.5 Plumbing Requirements

Plumbing requirements are the same for Option 1A. Refer to Option 1 Section 2.5 for conditions, with exception to items below.



Lower Level: Provide new plumbing fixtures, in lower level per men's and women's new layout. There are also additional fixtures, a mop sink, to support a janitor's closet and shower room. All selected fixtures to be low flow. Provide battery operated sensors at faucets.

3.6 Fire Protection Requirements

Fire protection requirements are the same for Option 1A. Refer to Option 1 Section 2.6 for conditions.

4.0 New Building – Option 2

4.1 Site Requirements

4.1.1 Building Placement:

The building placement in the southern corner of the site was chosen to maximize visibility of the new community center building. The intersection of Lovettsville Road, East Broad Way, and Milltown Road will be realigned to a perpendicular 3-way stop intersection with the Lovettsville Park project. This realignment coupled with the building horizontal and vertical placement will provide an inviting entrance to the Town of Lovettsville. Parking and dumpster pads have been moved to the south side of the building as shown in the new building option exhibits.

4.1.2 Grading:

The concept grading for the new building option attempts to mimic natural drainage divides and balance earthwork. Although a cut produced plan is provided, this could be refined to a near balance condition once pavement and concrete thickness, existing building foundation removal, and fine grading is considered in final design. The plan provides gentle slopes near the main entrance to support the proposed handicap spaces, access and the drop off layby. The parking lot entrance drive isle grades will be lower than existing in order to lessen the slopes down to the pool area of the site. This will also help produce cut for the additional parking lot in the existing ball field area. An average cross slope of 3 - 4% is used across the parking lot expansion to the north. This provides a safe, usable parking lot but also allows the proposed grades to tie back to existing grades without the use of retaining walls. The multi-use grass area is graded with a 2% slope to provide positive drainage to the stormwater management feature but also be a usable space for the community center. The finished floor elevation of the new building has been set at 513.00 feet. This will allow for adequate drainage away from all sides of the building but also provide clear visibility from the new intersection location.

The earthwork summary is as follows:

Cut	8100	cubic yds	10% removed for undesirables
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Fill	3600	cubic yds	10% added for compaction
Net	4500	cubic yds	Cut produced

4.1.3 Site Parking:

County code requires one parking space for every four people according to occupancy. The occupancy per code is 554 but once administrative staff of 11 is removed then the occupancy number is 543. Fifteen spaces are required for staff and three spaces are required for the neighbor. This yields a total required number of spaces as 154. A total of 155 parking spaces are provided throughout the site. Fifteen can be designated for staff, three dedicated spaces can remain for the neighbor near their existing location, and four handicapped-accessible spaces are provided near the main entrance. The remaining 133 spaces can be unassigned for general visitors.

4.1.4 Stormwater Management:

The stormwater management facility shown is intended to be an enhanced extended-detention pond to provide treatment for all disturbed areas within the project. An enhanced extended-detention basin has a higher efficiency than an extended-detention basin because it incorporates a shallow marsh with landscaping in its bottom. The shallow marsh provides additional pollutant removal through wetland plant uptake, absorption, physical filtration, and decomposition. The shallow marsh vegetation also helps to reduce the re-suspension of settled pollutants by trapping them. It is also noted that the project intends to achieve a LEED silver certification. This facility can be refined in final design to ensure that LEED credits are achieved for site quantity and/ or quality treatment. The current size of the facility is based on the assumption that all paving is impervious. If a pervious pavement option is preferred, the stormwater management facility could be reduced to expand the multi-use grass area.

4.2 Architecture Requirements

4.2.1 Building Envelope:

New Building: The configuration of the structure is comprised of two wings forming an “L” shaped building. The gymnasium, administration, service and support areas are grouped in one wing. The classrooms and classroom support spaces are grouped in the other. The main entrance into the building is between the two wings. This public zone consists of an open lobby, reception area and public restrooms and showers. The main wing housing the gym holds the street edge and is aligned with West Broadway. The building acts as an end to or beginning of the town depending on the direction of travel. The wing that contains the classrooms also addresses the street edge and provides access to the playground. The following are the advantages of the placement of new community center building towards the streets edge:



- It allows the existing community center to remain open and function during the construction of the new building.
- Eliminates the need of temporary facilities associated with displacement of the community center
- Directly reduces the cost of construction associated with the temporary trailer facilities.
- A visual connection between the community center and future Regional Park planned across the street.

This is a single story, masonry clad building, with clerestory elements highlighting both wings. Each wing is punctuated by glazing that allow natural diffused lighting into the building; at the curved roof atop the gym and above the double loaded corridor on the classroom side. Light shelves at the transoms will be introduced for the class rooms to make the most of the natural light and cut down on the heat gain and glare.

Masonry will be used as the main exterior element due to its durability, cost effectiveness and energy efficiency. Coursing, textures and block sizes will be used to create an interesting and distinct façade.

4.2.2 Interior Requirements:

The six classrooms are grouped into pairs with support services; two ADA accessible toilets and a common storage area in between. The storage area will have space for cubbies, to keep children's coats, hats etc. Sinks appropriately sized for kids heights will be added for clean up. Each classroom will have an access directly to the outside for egress and accessing the playground.

The organizing element that connects the classrooms is the space efficient double loaded corridor. The corridor is a double height space with clerestory to allow indirect light from outside filter into the corridor. Classroom corridor walls will have transom windows to allow light to enter.

The Administration office is located off of the lobby and will have visible connection to the lobby, corridor to the classrooms and gymnasium. There will be a reception desk in the lobby to help monitor and direct public access.

The Kitchen will have commercial grade stoves, freezers, icemaker and double door refrigerators for the storage of pre-prepared food to be heated and distributed to the classrooms and other functions held in the gym. Stainless steel work surfaces will be used throughout. A commercial exhaust hood will also be provided above the stoves, misc. stainless steel supports to hang tools overhead, and a stainless steel triple bowl sink will also be provided.

Due to the nature of the activities in the building the interior composition of finishes in the building should be durable in nature to with stand abuse. The classrooms should be both durable and non-hazardous. C.M.U wall partitions will be used almost entirely throughout the building. The gymnasium will have sound absorptive block to reduce the sound and noise transmission.



Finishes: The finishes in the public areas will be higher quality than other spaces but still tough and durable. Mechanical and electrical and other service areas will have masonry wall and sealed concrete floors. These spaces will receive the most wear out of any space outside of the classrooms.

Finishes in the Classrooms must be both durable and non-hazardous to the children. They must also be easily replaceable and repairable. The preferred floor finishes are linoleum with area rugs. All areas rugs shall have non-slip backing or under-layment to minimize slipping hazards. The preferred wall finishes include: hardwood bases, wainscots of wood or other durable material, with wood chair rails and painted gypsum board walls above the wainscot. Ceilings can be suspended Acoustic Ceiling Tile with a moisture resistant finish.

Option 2 Room Name	Size	Quantity	Total NSF
Main Level			
Room #1	646	1	646
Room #2	644	1	644
Room #3	647	1	647
Room #4	649	1	649
Room #5	638	1	638
Room #6	651	1	651
Single ADA Toilet #1	39	4	156
Single ADA Toilet #2	41	2	82
Support #1	131.5	2	263
Support #2	223	1	223
Administration	518	1	518
Work Room/Office	163	1	163
Lobby/Corridor	1,722	1	1,722
Janitor	27	1	27
Men's	275	1	275
Women's	275	1	275
Shower	42.5	2	85
Storage	415	1	415
Gym	4,517	1	4,517
Kitchen	383	1	383
Electrical Room	144	1	144
Pump Room	80	1	80
Data Room	98	1	98
Total			13,301

4.3 Mechanical Requirements

Mechanical options are the same for Option 2. Refer to Option 1 section 2.3 for conditions.

4.4 Electrical Requirements

All the lighting fixtures throughout the building will have T5 lamps to reduce the energy consumption. Individual spaces within the building shall utilize wall



mounted occupancy sensors, with a built in manual override, or ceiling mounted occupancy sensors with an over-ride toggle switch. In addition the lights can have the option to be controlled with a building lighting control system that reduced levels based on available daylight, as well as turns off lights off during nights, weekend and holidays

Electrical Room: The electrical room will be large enough to house the utility transformer and primary feeders. The size will meet an 8'x12' requirement by DCWM.

Green Power: Alternate green energy will be used to serve certain systems when possible to achieve LEED points.

4.5 Plumbing Requirements

A water service upgrade is required for the existing site. Reduction in water consumption and energy conservation will be provided for all water closets, lavatories and urinals. Low flow, pressure assisted, tank type toilets or wall mounted toilet with battery operated flush valves will be provided. Child height fixtures will be installed where appropriate. All fixture types for both adults and children will be in compliance with current IBC and IPC.

Faucets: Water faucets will have battery sensor operated faucets with 0.5 GMP.

Drinking Fountain: An electric water cooler high/low fountain, with a filter system will be provided.

Kitchen: Grease interceptors for all sinks will be provided. A water filtration and check valve will be provided at any beverage dispenser, coffee or ice maker or potable water source that will be consumed by the public.

Showers: Showers will be provided for both men's and women's toilets. This is a requirement for LEED

4.6 Fire Protection Requirements

Fire Suppression System: The building will be provided with a zoned automatic wet piped sprinkler system which will comply with the latest International Building Code (IBC), International Fire Code, and National Fire Protection Association Standards. System requirements will be based on a fire flow test. A Pump room may be required based on the flow test. This room will be 8'x10' in size and be located close to the service zoned area in the building.

Fire Extinguishers: Fire extinguishers will be located in exist access corridors and shall be in accordance with NFPA-10. All fire extinguishers in the corridor will be installed in recessed in cabinets.



Appendix A

Preliminary Concept Design Cost Estimate


**Lovettsville Community Center Renovation
Loudoun County, VA**

Preliminary Concept Design Cost Estimate

Prepared For:

**LSY Architects & Laboratory Planners
8484 Georgia Avenue, Suite 650
Silver Spring, MD 20910**

Prepared by:


DMS
Construction Consulting Services
**5550 Sterrett Place, Suite 300
Columbia, MD, 21044
410.740.1671**

DMS Project # 2012-187

May 23, 2012

D M S

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* Add Alternates	4

END OF REPORT

Notes

**Lovettsville Community Center Renovation
Loudoun County, VA**



Preliminary Concept Design Cost Estimate

May 23, 2012

Overview:

The following cost assessment for the “Lovettsville Community Center Renovation in Loudoun County, Virginia has been developed from the Preliminary Concept Design Submission Documents prepared by LSY Architects.

This project evaluates three potential options. Options 1 and 1A involve renovations to the existing community center with additions to the existing building. Option 2 is a complete demolition of the existing building with a new one story community center. All options include new site work including paving, lighting and a basketball court.

The level of pricing forming the basis of these cost assessments is representative of current day costs of construction in the Loudoun County, VA area, assuming that the project will be procured in a competitive bid environment with a minimum of three responsive bidders.

It should also be noted that the level of pricing assumes a fair and reasonable rate of return for overhead and profit for the General Contractor and his subcontractors and does take into consideration the present economic climate.

In preparing this cost assessment the following assumptions have been made:

HAZMAT handling will be required.

General:

Duration: The project is based upon an assumption of an 18 month construction schedule.

Contingency: We include an estimate design contingency of 10% to cover items that are not designed or included in the estimate. This contingency will decrease in value with each design submission until the contingency reaches zero.

Escalation: 0% escalation has been included in this cost assessment for cost escalation.

General Conditions / General Requirements: These costs include providing supervisory personnel, temporary construction barriers/partitions, etc. necessary to manage the construction process.

**Lovettsville Community Center Renovation
Loudoun County, VA**



Preliminary Concept Design Cost Estimate

May 23, 2012

Exclusions: We do not include the following items in this estimate:

- Design Fees or other consultant fees
- Legal fees
- Impact of other Government costs
- Costs of owners on site representation during the course of construction
- Costs resulting from owner requested changes or design changes arising during the course of construction
- Construction contingency
- Swing space/Relocation of existing tenants
- Commissioning agent
- Utility company charges/Fees
- Utility cap fees
- Security equipment (rough in only)
- Telecom equipment (rough in only)
- AV equipment (rough in only)
- Cubical, office furniture, chairs, filing cabinets
- Computers, monitoring equipment, printers, copiers

Further Notes & Clarifications:

This cost estimate has been developed for comparative purposes ONLY and measurements are based upon approximate quantity surveys as detailed as possible relative to available documentation. Where quantities are not available, assumptions have been made on historical references to similar type projects recently estimated by DMS.

It should also be noted that this cost estimate is an opinion of probable costs based on fair market value, and is not a prediction of the anticipated low bid. DMS has no control over the costs of labor, material, the GC's or any subcontractor's method of determining price or competitive bidding and market conditions.

Master Summary

**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate**

Master Summary

Option 1

Option 1-Base Bid	\$3,605,291	\$230.66 / GSF
Option 1, Alternate #1-EPDM Roof	\$123,500	\$7.90 / GSF
Option 1, Alternate #2-Gym Sprung Floor	\$66,487	\$4.25 / GSF
Option 1, Alternate #3-Gym Backboards, Scoreboard	\$21,600	\$1.38 / GSF
Total	\$3,816,878	\$244.20 / GSF

Option 1A

Option 1A-Base Bid	\$3,694,152	\$238.26 / GSF
Option 1A, Alternate #1-EPDM Roof	\$123,462	\$7.96 / GSF
Option 1A, Alternate #2-Gym Sprung Floor	\$66,487	\$4.29 / GSF
Option 1A, Alternate #3-Gym Backboards, Scoreboard	\$21,600	\$1.39 / GSF
Total	\$3,905,701	\$251.90 / GSF

Option 2

Option 2	\$4,579,419	\$329.93 / GSF
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Add Alternates To Base Bid

Alternate #1-Pool House	\$91,320
Alternate #2-Geothermal Roof Top Units	\$247,200
Alternate #3-VRF System	\$125,280
Alternate #4-Fire Pump Room (As Necessary)	\$120,000

Option 1

**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 1**

DIVISION SUMMARY

15,630 GSF

01 GENERAL REQUIREMENTS	\$360,000	\$23.03 / GSF
02 EXISTING CONDITIONS	\$285,236	\$18.25 / GSF
03 CONCRETE	\$61,192	\$3.92 / GSF
04 MASONRY	\$65,310	\$4.18 / GSF
05 METALS	\$125,188	\$8.01 / GSF
06 WOODS, PLASTICS & COMPOSITES	\$13,594	\$0.87 / GSF
07 THERMAL & MOISTURE PROTECTION	\$68,499	\$4.38 / GSF
08 DOORS & WINDOWS	\$221,680	\$14.18 / GSF
09 FINISHES	\$152,846	\$9.78 / GSF
10 SPECIALTIES	\$12,550	\$0.80 / GSF
11 EQUIPMENT	\$50,200	\$3.21 / GSF
12 FURNISHINGS	\$2,600	\$0.17 / GSF
13 SPECIAL CONSTRUCTION	\$0	\$0.00 / GSF
14 CONVEYING EQUIPMENT	\$93,000	\$5.95 / GSF
21 FIRE SUPPRESSION	\$70,335	\$4.50 / GSF
22 PLUMBING	\$76,775	\$4.91 / GSF
23 HVAC	\$400,122	\$25.60 / GSF
26 ELECTRICAL	\$270,774	\$17.32 / GSF
27 COMMUNICATIONS	\$10,941	\$0.70 / GSF
28 ELECTRONIC SAFETY & SECURITY	\$9,378	\$0.60 / GSF
31 EARTHWORK	\$97,600	\$6.24 / GSF
32 EXTERIOR IMPROVEMENTS	\$438,500	\$28.06 / GSF
33 UTILITIES	\$88,933	\$5.69 / GSF

SUBTOTAL	\$2,975,251	\$190.36 / GSF
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DESIGN CONTINGENCY	10.0%	\$297,525	\$19.04 / GSF
SUBTOTAL		\$3,272,777	

BONDS / INSURANCE	2.0%	\$65,456	\$4.19 / GSF
SUBTOTAL		\$3,338,232	

CONTRACTOR'S OVERHEAD & PROFIT	8.0%	\$267,059	\$17.09 / GSF
SUBTOTAL		\$3,605,291	

ESCALATION	0.0%	\$0	\$0.00 / GSF
SUBTOTAL		\$3,605,291	

TOTAL		\$3,605,291	\$230.66 / GSF
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Alternate #1-EPDM Roof	\$123,500	\$7.90 / GSF
Alternate #2-Gym Sprung Floor	\$66,487	\$4.25 / GSF
Alternate #3-Gym Backboards, Scoreboard	\$21,600	\$1.38 / GSF

**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 1
ESTIMATE DETAIL**

01 GENERAL REQUIREMENTS

Project Management & Coordination						
personnel / facilities / equipment	18	month	\$20,000.00	\$360,000		\$360,000
01 GENERAL REQUIREMENTS TOTAL						\$360,000

02 EXISTING CONDITIONS

Site Demolition						
site clearing / grub	60,000	sf	\$0.20	\$12,000		
remove existing asphalt paving	35,000	sf	\$0.80	\$28,000		
remove basketball court	4,700	sf	\$0.80	\$3,760		
						\$43,760
Building Demolition						
interior demolition	15,630	sf	\$2.00	\$31,260		
hazmat abatement	15,630	sf	\$1.00	\$15,630		
						\$46,890
Mechanical Demolition						
mechanical demolition	15,630	sf	\$0.50	\$7,815		
						\$7,815
Plumbing Demolition						
plumbing demo	15,630	sf	\$0.30	\$4,689		
						\$4,689
Fire Protection Demolition						
demo sprinkler system	15,630	sf	\$0.25	\$3,908		
						\$3,908
Electrical Demolition						
electrical demo	15,630	sf	\$0.60	\$9,378		
						\$9,378
Temporary Facilities						
classrooms	3	ea	\$40,827.00	\$122,481		
toilet unit	1	ea	\$26,315.00	\$26,315		
temporary utilities	1	ls	\$20,000.00	\$20,000		
						\$168,796
02 EXISTING CONDITIONS TOTAL						\$285,236

Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 1
ESTIMATE DETAIL

03 CONCRETE

Concrete Foundations & Footings

excavate & backfill, foundations	47	cy	\$30.00	\$1,410	
forms, foundations	860	sf	\$3.00	\$2,580	
rebar, foundations	2,000	lbs	\$0.90	\$1,800	
concrete, foundations	47	cy	\$230.00	\$10,810	
underpin existing foundations, allow	76	lf	\$150.00	\$11,400	
					\$28,000

Concrete Walls, Beams & Columns

forms, columns	360	sf	\$3.00	\$1,080	
rebar, columns	500	lbs	\$0.90	\$450	
concrete, columns	10	cy	\$230.00	\$2,300	
					\$3,830

Concrete Slab-on-Grade

gravel fill	36	cy	\$40.00	\$1,440	
wwm	1,863	sf	\$0.70	\$1,304	
rebar	2,000	lbs	\$0.90	\$1,800	
concrete	36	cy	\$220.00	\$7,920	
finish / cure	1,863	sf	\$1.00	\$1,863	
infill void at classroom #3	1	ls	\$2,000.00	\$2,000	
					\$16,327

Elevated Concrete Slab

concrete	8	cy	\$230.00	\$1,840	
finish / cure, elevated slab	506	sf	\$1.00	\$506	
					\$2,346

Other Concrete

elevator pit	1	ls	\$6,000.00	\$6,000	
flash patch existing floor	15,630	sf	\$0.30	\$4,689	
					\$10,689

03 CONCRETE TOTAL

\$61,192

04 MASONRY

Masonry, Exterior

brick veneer	1,560	sf	\$24.00	\$37,440	
brick pointing	6,000	sf	\$3.00	\$18,000	
rem/replace masonry wall for struct. observation	1	ls	\$2,000.00	\$2,000	
					\$57,440

Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 1
ESTIMATE DETAIL

Masonry, Interior						
	walls, 6" cmu	110	sf	\$13.00	\$1,430	
	walls, 8" cmu, elevator	460	sf	\$14.00	\$6,440	
						\$7,870
04 MASONRY TOTAL						\$65,310
<u>05 METALS</u>						
Structural Steel						
	W sections, beams	4	tons	\$4,000.00	\$16,000	
	W sections, columns	4	tons	\$4,000.00	\$16,000	
	joist	10	tons	\$4,000.00	\$40,000	
	bracing	3	tons	\$4,000.00	\$12,000	
	tie into existing building	1	ls	\$10,000.00	\$10,000	
						\$94,000
Metal Decking						
	metal deck-floor	551	sf	\$3.00	\$1,653	
	metal deck-roof	1,970	sf	\$3.00	\$5,910	
						\$7,563
Metal Fabrications						
	metal pan stairs	112	tlf	\$130.00	\$14,560	
	stair handrails	37	lf	\$95.00	\$3,515	
	stair guardrails	30	lf	\$185.00	\$5,550	
						\$23,625
05 METALS TOTAL						\$125,188
<u>06 WOODS, PLASTICS & COMPOSITES</u>						
Rough Carpentry						
	FR plywood backboard	96	sf	\$5.00	\$480	
	plywood, blocking	200	bf	\$4.00	\$800	
						\$1,280
Architectural Woodwork & Composites						
	countertop, SS kitchen	11	lf	\$225.00	\$2,363	
	base cabinet, SS	11	lf	\$350.00	\$3,675	
	wall cabinet, SS	11	lf	\$300.00	\$3,150	
	misc. shelving	15,630	sf	\$0.20	\$3,126	
						\$12,314
06 WOODS, PLASTICS & COMPOSITES TOTAL						\$13,594

**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 1
ESTIMATE DETAIL**

07 THERMAL & MOISTURE PROTECTION

Water Proofing						
	waterproofing to pits	216	sf	\$5.00	\$1,080	
	waterproofing to exist. exterior walls at classrm. #3	315	sf	\$5.00	\$1,575	
						\$2,655
Roofing						
	patch existing roof	9,844	sf	\$4.00	\$39,376	
	new EPDM roof for addition	1,889	sf	\$12.00	\$22,668	
						\$62,044
Joint Protection						
	sealants	9,500	sf	\$0.40	\$3,800	
						\$3,800
07 THERMAL & MOISTURE PROTECTION TOTAL						\$68,499

08 DOORS & WINDOWS

Doors & Frames						
	single door	18	ea	\$1,000.00	\$18,000	
	double door	5	ea	\$1,785.00	\$8,925	
	vision window within door	5	ea	\$85.00	\$425	
	glass single door	1	ea	\$2,000.00	\$2,000	
	storefront double door	4	ea	\$3,500.00	\$14,000	
						\$43,350
Hardware						
	single door	27	ea	\$500.00	\$13,500	
	double door	13	ea	\$900.00	\$11,700	
						\$25,200
Curtain Walls, Windows & Glazing						
	glass curtainwall system	1,030	sf	\$75.00	\$77,250	
	exterior windows	520	sf	\$55.00	\$28,600	
	interior glazing	552	sf	\$40.00	\$22,080	
	coiling window	1	ea	\$2,400.00	\$2,400	
	solar shading	228	lf	\$100.00	\$22,800	
						\$153,130
08 DOORS & WINDOWS TOTAL						\$221,680

**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 1
ESTIMATE DETAIL**

09 FINISHES

Plaster & Gypsum Board

interior partition	1,903	sf	\$7.00	\$13,321	
furring to exterior walls	6,470	sf	\$4.00	\$25,880	
rigid insulation to exterior walls	6,470	sf	\$1.80	\$11,646	
vapor barrier to exterior walls	6,470	sf	\$0.50	\$3,235	
metal stud backup	1,560	sf	\$7.00	\$10,920	
					\$65,002

Ceilings

ACT	8,953	sf	\$3.25	\$29,097	
paint exposed (gym)	4,384	sf	\$1.00	\$4,384	
					\$33,481

Flooring

carpet tile	3,528	sf	\$5.00	\$17,640	
ceramic tiled floor	595	sf	\$9.00	\$5,355	
vinyl, tile, (vct)	3,502	sf	\$2.75	\$9,631	
sand/refinish existing wood floors Rm# 2, 5	1,272	sf	\$5.00	\$6,360	
					\$38,986

Base

CT	257	lf	\$9.00	\$2,313	
rubber	1,696	lf	\$2.75	\$4,664	
					\$6,977

Wall Finishes

paint interior walls	12,000	sf	\$0.70	\$8,400	
					\$8,400

09 FINISHES TOTAL

\$152,846

10 SPECIALTIES

Interior Specialties

toilet partitions	5	ea	\$1,200.00	\$6,000	
grab bars	7	set	\$200.00	\$1,400	
multi roll tissue dispenser	9	ea	\$100.00	\$900	
soap dispenser	8	ea	\$50.00	\$400	
mirror	48	sf	\$25.00	\$1,200	
paper towel dispenser	8	ea	\$150.00	\$1,200	
paper towel disposal	8	ea	\$100.00	\$800	
mop/broom holder	1	ea	\$50.00	\$50	
fire extinguisher cabinets	2	ea	\$300.00	\$600	
					\$12,550

**Lovettsville Community Center Renovation
Loudoun County, VA
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Option 1
ESTIMATE DETAIL**

10 SPECIALTIES TOTAL \$12,550

11 EQUIPMENT

Equipment						
	ice cube machine	1	ea	\$2,500.00	\$2,500	
	kitchen hood	1	ea	\$6,500.00	\$6,500	
	4 burner range	2	ea	\$5,000.00	\$10,000	
	freezer	1	ea	\$8,000.00	\$8,000	
	refrigerator	2	ea	\$8,000.00	\$16,000	
	dishwasher	1	ea	\$1,200.00	\$1,200	
	SS work table	1	ea	\$6,000.00	\$6,000	
						\$50,200

11 EQUIPMENT TOTAL \$50,200

12 FURNISHINGS

Window Shades						
	interior shades / blinds, manual	520	sf	\$5.00	\$2,600	
						\$2,600

12 FURNISHINGS TOTAL \$2,600

14 CONVEYING EQUIPMENT

Conveying Equipment						
	elevator	3	stop	\$30,000.00	\$90,000	
	elevator fit out, passenger	1	ea	\$3,000.00	\$3,000	
						\$93,000

14 CONVEYING EQUIPMENT TOTAL \$93,000

21 FIRE SUPPRESSION

Fire Suppression						
	sprinkler system	15,630	sf	\$4.50	\$70,335	
	fire & jockey pump assembly-Not required	1	ls	\$0.00	\$0	
						\$70,335

21 FIRE SUPPRESSION TOTAL \$70,335

Lovettsville Community Center Renovation
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Option 1
ESTIMATE DETAIL

22 PLUMBING

Domestic Water Piping	CW / HW / HWR piping	15,630	sf	\$1.20	\$18,756	\$18,756
Sanitary & Vent System	san/vent pipe	15,630	sf	\$0.80	\$12,504	\$12,504
Storm Drainage System	storm piping	15,630	sf	\$0.30	\$4,689	\$4,689
Plumbing Equipment	sump pump, elevator pit	1	ea	\$3,500.00	\$3,500	
	grease interceptor	1	ea	\$5,000.00	\$5,000	\$8,500
Plumbing Fixtures	water closet	13	ea	\$800.00	\$10,400	
	lavatory, countertop	3	ea	\$700.00	\$2,100	
	lavatory, wall hung	10	ea	\$800.00	\$8,000	
	urinal	2	ea	\$700.00	\$1,400	
	janitor's mop sink	1	ea	\$1,200.00	\$1,200	
	kitchen sink	1	ea	\$1,000.00	\$1,000	
	pot-washing sink, 3-compartment	1	ea	\$3,500.00	\$3,500	\$27,600
Other Plumbing	penetrations/firestopping	15,630	sf	\$0.20	\$3,126	
	testing	16	hrs	\$100.00	\$1,600	\$4,726

22 PLUMBING TOTAL **\$76,775**

23 HVAC

HVAC Air Distribution	ductwork, galvanized, allow .7 lbs per sf	10,941	lbs	\$8.00	\$87,528	
	ductwork linings/insulation	7,659	sf	\$2.50	\$19,147	
	mechanical accessories/diffusers	15,630	sf	\$1.50	\$23,445	\$130,120
HVAC Equipment	AHU-1	26	ton	\$1,700.00	\$44,200	

Lovettsville Community Center Renovation
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Option 1
ESTIMATE DETAIL

	AHU-2	12	ton	\$1,700.00	\$20,400	
	AHU-3	11	ton	\$1,700.00	\$18,700	
	AHU-4	11	ton	\$1,700.00	\$18,700	
	VFD	8	ea	\$3,000.00	\$24,000	
	VAV box with electric reheat	9	ea	\$1,200.00	\$10,800	
	thermostat	9	ea	\$350.00	\$3,150	
	exhaust fans-allow	3,000	cfm	\$2.50	\$7,500	
	5 ton DX unit	1	ea	\$6,500.00	\$6,500	
						\$153,950
Other HVAC						
	vibration controls	15,630	sf	\$0.10	\$1,563	
	controls, ddc	1	ls	\$60,000.00	\$60,000	
	rigging	1	ls	\$5,000.00	\$5,000	
	firestopping/penetrations	15,630	hrs	\$0.30	\$4,689	
	testing & balancing	48	hrs	\$100.00	\$4,800	
	mechanical general conditions	10	mths	\$4,000.00	\$40,000	
						\$116,052
23 HVAC TOTAL						\$400,122
<u>26 ELECTRICAL</u>						
Electrical Equipment						
	distribution panel, 200a	4	ea	\$2,200.00	\$8,800	
	distribution panel, 400a	1	ea	\$4,000.00	\$4,000	
	switchboard, 1600a	1	ea	\$16,000.00	\$16,000	
	feeders/conduit	100	lf	\$45.00	\$4,500	
						\$33,300
Electrical Power Devices						
	power devices	15,630	sf	\$4.50	\$70,335	
						\$70,335
Interior Lighting						
	light fixtures, w/ conduit & wire	15,630	sf	\$6.00	\$93,780	
	lighting control system	15,630	sf	\$1.00	\$15,630	
						\$109,410
Other Electrical						
	electrical general conditions	10	mths	\$4,000.00	\$40,000	
	lightning protection/grounding	15,630	sf	\$0.25	\$3,908	
	firestopping/penetrations	15,630	sf	\$0.20	\$3,126	
	testing	24	hrs	\$120.00	\$2,880	
	mechanical equipment connections	15,630	sf	\$0.50	\$7,815	
						\$57,729

**Lovettsville Community Center Renovation
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Option 1
ESTIMATE DETAIL**

26 ELECTRICAL TOTAL **\$270,774**

27 COMMUNICATIONS

Data / Voice Communications						
telecom / data system, rough in only	15,630	sf	\$0.50	\$7,815		\$7,815

Audio-Video Communications						
AV system, rough in only	15,630	sf	\$0.20	\$3,126		\$3,126

27 COMMUNICATIONS TOTAL **\$10,941**

28 ELECTRONIC SAFETY & SECURITY

Electronic Security						
security system, biometric access control	15,630	sf	\$0.20	\$3,126		\$3,126

Electronic Fire Alarm						
fire alarm system	15,630	sf	\$0.40	\$6,252		\$6,252

28 ELECTRONIC SAFETY & SECURITY TOTAL **\$9,378**

31 EARTHWORK

Earth Moving						
cut to fill	2,600	cy	\$6.00	\$15,600		
import to fill	2,600	cy	\$25.00	\$65,000		
						\$80,600

Erosion Control						
construction entrance	1	ea	\$3,000.00	\$3,000		
silt fence	1,200	lf	\$5.00	\$6,000		
tree protection	400	lf	\$5.00	\$2,000		
erosion control maintenance	4	mths	\$1,500.00	\$6,000		
						\$17,000

31 EARTHWORK TOTAL **\$97,600**

Lovettsville Community Center Renovation
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ESTIMATE DETAIL

32 EXTERIOR IMPROVEMENTS

Paving

asphalt road	53,500	sf	\$4.00	\$214,000	
curb	400	lf	\$18.00	\$7,200	
stripping	53,500	sf	\$0.20	\$10,700	
concrete sidewalk, 4"	4,000	sf	\$6.00	\$24,000	
dumpster pad	400	ea	\$10.00	\$4,000	
					\$259,900

Site Improvements

basketball court surfacing	4,700	sf	\$6.00	\$28,200	
fence for basketball court	2,880	sf	\$5.00	\$14,400	
basketball hoop	2	ea	\$3,000.00	\$6,000	
					\$48,600

Exterior Lighting

street lighting, 30' pole	22	ea	\$4,500.00	\$99,000	
wire/trenching	2,000	lf	\$8.00	\$16,000	
					\$115,000

Planting

landscaping	1	ls	\$15,000.00	\$15,000	
					\$15,000

32 EXTERIOR IMPROVEMENTS TOTAL

\$438,500

33 UTILITIES

Electrical Service

upgrade utility transformer	by others	ea	\$0.00	\$0	
upgrade primary feeders to transformer	200	lf	\$45.00	\$9,000	
					\$9,000

Water Utilities

water line, steel piping 2"	450	lf	\$35.00	\$15,750	
connect to existing water line	1	loc	\$1,500.00	\$1,500	
excavate/backfill	250	cy	\$30.00	\$7,500	
					\$24,750

Sanitary Sewer System

pvc piping, 4"	125	lf	\$30.00	\$3,750	
HDPE 1.5" pipe/excavation	350	lf	\$15.00	\$5,250	
excavation/backfill, to the above	69	cy	\$30.00	\$2,083	
connect to existing	1	loc	\$1,500.00	\$1,500	
					\$12,583

Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 1
ESTIMATE DETAIL

Storm Water, Site							
	storm water management	14,200	sf	\$3.00	\$42,600		
						\$42,600	
33 UTILITIES TOTAL							\$88,933

Lovettsville Community Center Renovation
 Loudoun County, VA
 Preliminary Concept Design Cost Estimate
 Alternates, Option 1
 ESTIMATE DETAIL

Alternate #1-EPDM Roof

Roofing

EPDM roof/flashing	11,733	sf	\$12.00	\$140,796
demo existing roof	9,730	sf	\$2.50	\$24,325
patch existing roof	9,884	sf	-\$4.00	-\$39,536
new EPDM roof for addition	1,889	sf	-\$12.00	-\$22,668

\$102,917

Subtotal Total Alternate #1-EPDM Roof

\$102,917

Markups

20%

Total-Alternate #1-EPDM Roof

\$123,500

Alternate #2-Gym Sprung Wood Floor

Flooring

wood floor, gymnasium	4,262	sf	\$13.00	\$55,406
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\$55,406

Subtotal Total Alternate #2-Gym Sprung Wood Floor

\$55,406

Markups

20%

Total-Alternate #2-Gym Floor

\$66,487

Alternate #3-Gym Backboard, Scoreboard

Flooring

basketball backboard	2	ea	\$4,000.00	\$8,000
scoreboard	1	ea	\$10,000.00	\$10,000

\$18,000

Subtotal Total Alternate #3-Gym Backboard, Scoreboard

\$18,000

Markups

20%

Total-Alternate #2-Gym Floor

\$21,600

Option 1A

**Lovettsville Community Center Renovation
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Preliminary Concept Design Cost Estimate
Option 1A**

DIVISION SUMMARY

15,505 GSF

01 GENERAL REQUIREMENTS	\$360,000	\$23.22 / GSF
02 EXISTING CONDITIONS	\$285,236	\$18.40 / GSF
03 CONCRETE	\$59,734	\$3.85 / GSF
04 MASONRY	\$76,830	\$4.96 / GSF
05 METALS	\$124,900	\$8.06 / GSF
06 WOODS, PLASTICS & COMPOSITES	\$13,569	\$0.88 / GSF
07 THERMAL & MOISTURE PROTECTION	\$74,715	\$4.82 / GSF
08 DOORS & WINDOWS	\$242,310	\$15.63 / GSF
09 FINISHES	\$177,010	\$11.42 / GSF
10 SPECIALTIES	\$12,550	\$0.81 / GSF
11 EQUIPMENT	\$50,200	\$3.24 / GSF
12 FURNISHINGS	\$2,600	\$0.17 / GSF
13 SPECIAL CONSTRUCTION	\$0	\$0.00 / GSF
14 CONVEYING EQUIPMENT	\$93,000	\$6.00 / GSF
21 FIRE SUPPRESSION	\$69,773	\$4.50 / GSF
22 PLUMBING	\$91,868	\$5.93 / GSF
23 HVAC	\$399,884	\$25.79 / GSF
26 ELECTRICAL	\$269,217	\$17.36 / GSF
27 COMMUNICATIONS	\$10,854	\$0.70 / GSF
28 ELECTRONIC SAFETY & SECURITY	\$9,303	\$0.60 / GSF
31 EARTHWORK	\$97,600	\$6.29 / GSF
32 EXTERIOR IMPROVEMENTS	\$438,500	\$28.28 / GSF
33 UTILITIES	\$88,933	\$5.74 / GSF

SUBTOTAL	\$3,048,584	\$196.62 / GSF
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DESIGN CONTINGENCY	10.0%	\$304,858	\$19.66 / GSF
SUBTOTAL		\$3,353,442	

BONDS / INSURANCE	2.0%	\$67,069	\$4.33 / GSF
SUBTOTAL		\$3,420,511	

CONTRACTOR'S OVERHEAD & PROFIT	8.0%	\$273,641	\$17.65 / GSF
SUBTOTAL		\$3,694,152	

ESCALATION	0.0%	\$0	\$0.00 / GSF
SUBTOTAL		\$3,694,152	

TOTAL		\$3,694,152	\$238.26 / GSF
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Alternate #1-EPDM Roof	\$123,462	\$7.96 / GSF
Alternate #2-Gym Sprung Floor	\$66,487	\$4.29 / GSF
Alternate #3-Gym Backboards, Scoreboard	\$21,600	\$1.39 / GSF

**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 1A
ESTIMATE DETAIL**

01 GENERAL REQUIREMENTS

Project Management & Coordination						
personnel / facilities / equipment	18	month	\$20,000.00	\$360,000		\$360,000
01 GENERAL REQUIREMENTS TOTAL						\$360,000

02 EXISTING CONDITIONS

Site Demolition						
site clearing / grub	60,000	sf	\$0.20	\$12,000		
remove existing asphalt paving	35,000	sf	\$0.80	\$28,000		
remove basketball court	4,700	sf	\$0.80	\$3,760		
						\$43,760
Building Demolition						
interior demolition	15,630	sf	\$2.00	\$31,260		
hazmat abatement	15,630	sf	\$1.00	\$15,630		
						\$46,890
Mechanical Demolition						
mechanical demolition	15,630	sf	\$0.50	\$7,815		
						\$7,815
Plumbing Demolition						
plumbing demo	15,630	sf	\$0.30	\$4,689		
						\$4,689
Fire Protection Demolition						
demo sprinkler system	15,630	sf	\$0.25	\$3,908		
						\$3,908
Electrical Demolition						
electrical demo	15,630	sf	\$0.60	\$9,378		
						\$9,378
Temporary Facilities						
classrooms	3	ea	\$40,827.00	\$122,481		
toilet unit	1	ea	\$26,315.00	\$26,315		
temporary utilities	1	ls	\$20,000.00	\$20,000		
						\$168,796
02 EXISTING CONDITIONS TOTAL						\$285,236

**Lovettsville Community Center Renovation
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Option 1A
ESTIMATE DETAIL**

03 CONCRETE

Concrete Foundations & Footings

excavate & backfill, foundations	52	cy	\$30.00	\$1,560	
forms, foundations	900	sf	\$3.00	\$2,700	
rebar, foundations	2,200	lbs	\$0.90	\$1,980	
concrete, foundations	52	cy	\$230.00	\$11,960	
underpin existing foundations, allow	42	lf	\$150.00	\$6,300	
					\$24,500

Concrete Walls, Beams & Columns

forms, columns	400	sf	\$3.00	\$1,200	
rebar, columns	650	lbs	\$0.90	\$585	
concrete, columns	13	cy	\$230.00	\$2,990	
					\$4,775

Concrete Slab-on-Grade

gravel fill	44	cy	\$40.00	\$1,760	
wwm	2,400	sf	\$0.70	\$1,680	
rebar	2,500	lbs	\$0.90	\$2,250	
concrete	44	cy	\$220.00	\$9,680	
finish / cure	2,400	sf	\$1.00	\$2,400	
infill void at classroom #3	1	ls	\$2,000.00	\$2,000	
					\$19,770

Other Concrete

elevator pit	1	ls	\$6,000.00	\$6,000	
flash patch existing floor	15,630	sf	\$0.30	\$4,689	
					\$10,689

03 CONCRETE TOTAL

\$59,734

04 MASONRY

Masonry, Exterior

brick veneer	2,040	sf	\$24.00	\$48,960	
brick pointing	6,000	sf	\$3.00	\$18,000	
rem/replace masonry wall for struct. observation	1	ls	\$2,000.00	\$2,000	
					\$68,960

Masonry, Interior

walls, 6" cmu	110	sf	\$13.00	\$1,430	
walls, 8" cmu, elevator	460	sf	\$14.00	\$6,440	
					\$7,870

04 MASONRY TOTAL

\$76,830

Lovettsville Community Center Renovation
 Loudoun County, VA
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 Option 1A
ESTIMATE DETAIL

05 METALS

Structural Steel

W sections, beams	4	tons	\$4,000.00	\$16,000	
W sections, columns	4	tons	\$4,000.00	\$16,000	
joist	10	tons	\$4,000.00	\$40,000	
bracing	3	tons	\$4,000.00	\$12,000	
tie into existing building	1	ls	\$10,000.00	\$10,000	
					\$94,000

Metal Decking

metal deck-roof	2,425	sf	\$3.00	\$7,275	
					\$7,275

Metal Fabrications

metal pan stairs	112	tlf	\$130.00	\$14,560	
stair handrails	37	lf	\$95.00	\$3,515	
stair guardrails	30	lf	\$185.00	\$5,550	
					\$23,625

05 METALS TOTAL

\$124,900

06 WOODS, PLASTICS & COMPOSITES

Rough Carpentry

FR plywood backboard	96	sf	\$5.00	\$480	
plywood, blocking	200	bf	\$4.00	\$800	
					\$1,280

Architectural Woodwork & Composites

countertop, SS kitchen	11	lf	\$225.00	\$2,363	
base cabinet, SS	11	lf	\$350.00	\$3,675	
wall cabinet, SS	11	lf	\$300.00	\$3,150	
misc. shelving	15,505	sf	\$0.20	\$3,101	
					\$12,289

06 WOODS, PLASTICS & COMPOSITES TOTAL

\$13,569

07 THERMAL & MOISTURE PROTECTION

Water Proofing

water proofing to pits	216	sf	\$5.00	\$1,080	
waterproofing to exist. exterior walls at classrm. #3	315	sf	\$5.00	\$1,575	
					\$2,655

**Lovettsville Community Center Renovation
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Option 1A
ESTIMATE DETAIL**

Roofing						
	patch existing roof	9,820	sf	\$4.00	\$39,280	
	new EPDM roof for addition	2,415	sf	\$12.00	\$28,980	
						\$68,260
Joint Protection						
	sealants	9,500	sf	\$0.40	\$3,800	
						\$3,800
07 THERMAL & MOISTURE PROTECTION TOTAL						\$74,715

08 DOORS & WINDOWS

Doors & Frames						
	single door	29	ea	\$1,000.00	\$29,000	
	double door	3	ea	\$1,785.00	\$5,355	
	vision window within door	5	ea	\$85.00	\$425	
	glass single door	1	ea	\$2,000.00	\$2,000	
	storefront double door	8	ea	\$3,500.00	\$28,000	
						\$64,780
Hardware						
	single door	29	ea	\$500.00	\$14,500	
	double door	11	ea	\$900.00	\$9,900	
						\$24,400
Curtain Walls, Windows & Glazing						
	glass curtainwall system	1,030	sf	\$75.00	\$77,250	
	exterior windows	520	sf	\$55.00	\$28,600	
	interior glazing	552	sf	\$40.00	\$22,080	
	coiling window	1	ea	\$2,400.00	\$2,400	
	solar shading	228	lf	\$100.00	\$22,800	
						\$153,130
08 DOORS & WINDOWS TOTAL						\$242,310

09 FINISHES

Plaster & Gypsum Board						
	interior partition	4,308	sf	\$7.00	\$30,156	
	furring to exterior walls	7,100	sf	\$4.00	\$28,400	
	rigid insulation to exterior walls	7,100	sf	\$1.80	\$12,780	
	vapor barrier to exterior walls	7,100	sf	\$0.50	\$3,550	

Lovettsville Community Center Renovation
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Option 1A
ESTIMATE DETAIL

	metal stud backup	2,040	sf	\$7.00	\$14,280	
						\$89,166
Ceilings						
	ACT	8,953	sf	\$3.25	\$29,097	
	paint exposed (gym)	4,384	sf	\$1.00	\$4,384	
						\$33,481
Flooring						
	carpet tile	3,528	sf	\$5.00	\$17,640	
	ceramic tiled floor	595	sf	\$9.00	\$5,355	
	vinyl, tile, (vct)	3,502	sf	\$2.75	\$9,631	
	sand/refinish existing wood floors Rm# 2, 5	1,272	sf	\$5.00	\$6,360	
						\$38,986
Base						
	CT	257	lf	\$9.00	\$2,313	
	rubber	1,696	lf	\$2.75	\$4,664	
						\$6,977
Wall Finishes						
	paint interior walls	12,000	sf	\$0.70	\$8,400	
						\$8,400
09 FINISHES TOTAL						\$177,010

10 SPECIALTIES

Interior Specialties						
	toilet partitions	5	ea	\$1,200.00	\$6,000	
	grab bars	7	set	\$200.00	\$1,400	
	multi roll tissue dispenser	9	ea	\$100.00	\$900	
	soap dispenser	8	ea	\$50.00	\$400	
	mirror	48	sf	\$25.00	\$1,200	
	paper towel dispenser	8	ea	\$150.00	\$1,200	
	paper towel disposal	8	ea	\$100.00	\$800	
	mop/broom holder	1	ea	\$50.00	\$50	
	fire extinguisher cabinets	2	ea	\$300.00	\$600	
						\$12,550
10 SPECIALTIES TOTAL						\$12,550

11 EQUIPMENT

Equipment

Lovettsville Community Center Renovation
 Loudoun County, VA
 Preliminary Concept Design Cost Estimate
 Option 1A
 ESTIMATE DETAIL

ice cube machine	1	ea	\$2,500.00	\$2,500	
kitchen hood	1	ea	\$6,500.00	\$6,500	
4 burner range	2	ea	\$5,000.00	\$10,000	
freezer	1	ea	\$8,000.00	\$8,000	
refrigerator	2	ea	\$8,000.00	\$16,000	
dishwasher	1	ea	\$1,200.00	\$1,200	
SS work table	1	ea	\$6,000.00	\$6,000	
					\$50,200

11 EQUIPMENT TOTAL \$50,200

12 FURNISHINGS

Window Shades					
interior shades / blinds, manual	520	sf	\$5.00	\$2,600	
					\$2,600

12 FURNISHINGS TOTAL \$2,600

14 CONVEYING EQUIPMENT

Conveying Equipment					
elevator	3	stop	\$30,000.00	\$90,000	
elevator fit out, passenger	1	ea	\$3,000.00	\$3,000	
					\$93,000

14 CONVEYING EQUIPMENT TOTAL \$93,000

21 FIRE SUPPRESSION

Fire Suppression					
sprinkler system	15,505	sf	\$4.50	\$69,773	
fire & jockey pump assembly-Not required	1	ls	\$0.00	\$0	
					\$69,773

21 FIRE SUPPRESSION TOTAL \$69,773

22 PLUMBING

Domestic Water Piping

Lovettsville Community Center Renovation
Loudoun County, VA
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Option 1A
ESTIMATE DETAIL

	CW / HW / HWR piping	15,505	sf	\$1.90	\$29,460	\$29,460
Sanitary & Vent System	san/vent pipe	15,505	sf	\$1.10	\$17,056	\$17,056
Storm Drainage System	storm piping	15,505	sf	\$0.30	\$4,652	\$4,652
Plumbing Equipment	sump pump, elevator pit	1	ea	\$3,500.00	\$3,500	
	grease interceptor	1	ea	\$5,000.00	\$5,000	\$8,500
Plumbing Fixtures	water closet	13	ea	\$800.00	\$10,400	
	lavatory, countertop	10	ea	\$700.00	\$7,000	
	lavatory, wall hung	5	ea	\$800.00	\$4,000	
	urinal	2	ea	\$700.00	\$1,400	
	janitor's mop sink	1	ea	\$1,200.00	\$1,200	
	pot-washing sink, 3-compartment	1	ea	\$3,500.00	\$3,500	\$27,500
Other Plumbing	penetrations/firestopping	15,505	sf	\$0.20	\$3,101	
	testing	16	hrs	\$100.00	\$1,600	\$4,701
22 PLUMBING TOTAL						\$91,868

23 HVAC

HVAC Air Distribution	ductwork, galvanized, allow .7 lbs per sf	10,941	lbs	\$8.00	\$87,528	
	ductwork linings/insulation	7,659	sf	\$2.50	\$19,147	
	mechanical accessories/diffusers	15,505	sf	\$1.50	\$23,258	\$129,932
HVAC Equipment	AHU-1	26	ton	\$1,700.00	\$44,200	
	AHU-2	12	ton	\$1,700.00	\$20,400	
	AHU-3	11	ton	\$1,700.00	\$18,700	
	AHU-4	11	ton	\$1,700.00	\$18,700	
	VFD	8	ea	\$3,000.00	\$24,000	

Lovettsville Community Center Renovation
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Option 1A
ESTIMATE DETAIL

VAV box with electric reheat	9	ea	\$1,200.00	\$10,800	
thermostat	9	ea	\$350.00	\$3,150	
exhaust fans-allow	3,000	cfm	\$2.50	\$7,500	
5 ton DX unit	1	ea	\$6,500.00	\$6,500	
					\$153,950
Other HVAC					
vibration controls	15,505	sf	\$0.10	\$1,551	
controls, ddc	1	ls	\$60,000.00	\$60,000	
rigging	1	ls	\$5,000.00	\$5,000	
firestopping/penetrations	15,505	hrs	\$0.30	\$4,652	
testing & balancing	48	hrs	\$100.00	\$4,800	
mechanical general conditions	10	mths	\$4,000.00	\$40,000	
					\$116,002
23 HVAC TOTAL					\$399,884
<u>26 ELECTRICAL</u>					
Electrical Equipment					
distribution panel, 200a	4	ea	\$2,200.00	\$8,800	
distribution panel, 400a	1	ea	\$4,000.00	\$4,000	
switchboard, 1600a	1	ea	\$16,000.00	\$16,000	
feeders/conduit	100	lf	\$45.00	\$4,500	
					\$33,300
Electrical Power Devices					
power devices	15,505	sf	\$4.50	\$69,773	
					\$69,773
Interior Lighting					
light fixtures, w/ conduit & wire	15,505	sf	\$6.00	\$93,030	
lighting control system	15,505	sf	\$1.00	\$15,505	
					\$108,535
Other Electrical					
electrical general conditions	10	mths	\$4,000.00	\$40,000	
lightning protection/grounding	15,505	sf	\$0.25	\$3,876	
firestopping/penetrations	15,505	sf	\$0.20	\$3,101	
testing	24	hrs	\$120.00	\$2,880	
mechanical equipment connections	15,505	sf	\$0.50	\$7,753	
					\$57,610
26 ELECTRICAL TOTAL					\$269,217

**Lovettsville Community Center Renovation
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Option 1A
ESTIMATE DETAIL**

27 COMMUNICATIONS

Data / Voice Communications						
telecom / data system, rough in only	15,505	sf	\$0.50	\$7,753		\$7,753
Audio-Video Communications						
AV system, rough in only	15,505	sf	\$0.20	\$3,101		\$3,101
27 COMMUNICATIONS TOTAL						\$10,854

28 ELECTRONIC SAFETY & SECURITY

Electronic Security						
security system, biometric access control	15,505	sf	\$0.20	\$3,101		\$3,101
Electronic Fire Alarm						
fire alarm system	15,505	sf	\$0.40	\$6,202		\$6,202
28 ELECTRONIC SAFETY & SECURITY TOTAL						\$9,303

31 EARTHWORK

Earth Moving						
cut to fill	2,600	cy	\$6.00	\$15,600		
import to fill	2,600	cy	\$25.00	\$65,000		\$80,600
Erosion Control						
construction entrance	1	ea	\$3,000.00	\$3,000		
silt fence	1,200	lf	\$5.00	\$6,000		
tree protection	400	lf	\$5.00	\$2,000		
erosion control maintenance	4	mths	\$1,500.00	\$6,000		\$17,000
31 EARTHWORK TOTAL						\$97,600

**Lovettsville Community Center Renovation
Loudoun County, VA
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Option 1A
ESTIMATE DETAIL**

32 EXTERIOR IMPROVEMENTS

Paving

asphalt road	53,500	sf	\$4.00	\$214,000	
curb	400	lf	\$18.00	\$7,200	
stripping	53,500	sf	\$0.20	\$10,700	
concrete sidewalk, 4"	4,000	sf	\$6.00	\$24,000	
dumpster pad	400	ea	\$10.00	\$4,000	
					\$259,900

Site Improvements

basketball court surfacing	4,700	sf	\$6.00	\$28,200	
fence for basketball court	2,880	sf	\$5.00	\$14,400	
basketball hoop	2	ea	\$3,000.00	\$6,000	
					\$48,600

Exterior Lighting

street lighting, 30' pole	22	ea	\$4,500.00	\$99,000	
wire/trenching	2,000	lf	\$8.00	\$16,000	
					\$115,000

Planting

landscaping	1	ls	\$15,000.00	\$15,000	
					\$15,000

32 EXTERIOR IMPROVEMENTS TOTAL

\$438,500

33 UTILITIES

Electrical Service

upgrade utility transformer	by others	ea	\$0.00	\$0	
upgrade primary feeders to transformer	200	lf	\$45.00	\$9,000	
					\$9,000

Water Utilities

water line, steel piping 2"	450	lf	\$35.00	\$15,750	
connect to existing water line	1	loc	\$1,500.00	\$1,500	
excavate/backfill	250	cy	\$30.00	\$7,500	
					\$24,750

Sanitary Sewer System

pvc piping, 4"	125	lf	\$30.00	\$3,750	
HDPE 1.5" pipe/excavation	350	lf	\$15.00	\$5,250	
excavation/backfill, to the above	69	cy	\$30.00	\$2,083	
connect to existing	1	loc	\$1,500.00	\$1,500	
					\$12,583

Lovettsville Community Center Renovation
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Option 1A
ESTIMATE DETAIL

Storm Water, Site							
	storm water management	14,200	sf	\$3.00	\$42,600		
						\$42,600	
33 UTILITIES TOTAL							\$88,933

Lovettsville Community Center Renovation
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 Alternates, Option 1A
 ESTIMATE DETAIL

Alternate #1-EPDM Roof

Roofing						
	EPDM roof/flashing	12,235	sf	\$12.00	\$146,820	
	demo existing roof	9,730	sf	\$2.50	\$24,325	
	patch existing roof	9,820	sf	-\$4.00	-\$39,280	
	new EPDM roof for addition	2,415	sf	-\$12.00	-\$28,980	
						\$102,885
Subtotal Total Alternate #1-EPDM Roof						\$102,885
Markups						20%
	Total-Alternate #1-EPDM Roof					\$123,462

Alternate #2-Gym Sprung Wood Floor

Flooring						
	wood floor, gymnasium	4,262	sf	\$13.00	\$55,406	
						\$55,406
Subtotal Total Alternate #2-Gym Sprung Wood Floor						\$55,406
Markups						20%
	Total-Alternate #2-Gym Floor					\$66,487

Alternate #3-Gym Backboard, Scoreboard

Flooring						
	basketball backboard	2	ea	\$4,000.00	\$8,000	
	scoreboard	1	ea	\$10,000.00	\$10,000	
						\$18,000
Subtotal Total Alternate #3-Gym Backboard, Scoreboard						\$18,000
Markups						20%
	Total-Alternate #2-Gym Floor					\$21,600

Option 2

**Lovettsville Community Center Renovation
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Preliminary Concept Design Cost Estimate
Option 2**

DIVISION SUMMARY

13,880 GSF

01 GENERAL REQUIREMENTS	\$360,000	\$25.94 / GSF
02 EXISTING CONDITIONS	\$168,800	\$12.16 / GSF
03 CONCRETE	\$150,914	\$10.87 / GSF
04 MASONRY	\$340,570	\$24.54 / GSF
05 METALS	\$213,545	\$15.39 / GSF
06 WOODS, PLASTICS & COMPOSITES	\$36,930	\$2.66 / GSF
07 THERMAL & MOISTURE PROTECTION	\$179,296	\$12.92 / GSF
08 DOORS & WINDOWS	\$326,230	\$23.50 / GSF
09 FINISHES	\$280,382	\$20.20 / GSF
10 SPECIALTIES	\$15,600	\$1.12 / GSF
11 EQUIPMENT	\$70,200	\$5.06 / GSF
12 FURNISHINGS	\$4,930	\$0.36 / GSF
13 SPECIAL CONSTRUCTION	\$0	\$0.00 / GSF
14 CONVEYING EQUIPMENT	\$0	\$0.00 / GSF
21 FIRE SUPPRESSION	\$62,460	\$4.50 / GSF
22 PLUMBING	\$165,424	\$11.92 / GSF
23 HVAC	\$423,645	\$30.52 / GSF
26 ELECTRICAL	\$306,608	\$22.09 / GSF
27 COMMUNICATIONS	\$24,984	\$1.80 / GSF
28 ELECTRONIC SAFETY & SECURITY	\$47,192	\$3.40 / GSF
31 EARTHWORK	\$56,904	\$4.10 / GSF
32 EXTERIOR IMPROVEMENTS	\$462,200	\$33.30 / GSF
33 UTILITIES	\$82,333	\$5.93 / GSF

SUBTOTAL	\$3,779,147	\$272.27 / GSF
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DESIGN CONTINGENCY	10.0%	\$377,915	\$27.23 / GSF
SUBTOTAL		\$4,157,062	

BONDS / INSURANCE	2.0%	\$83,141	\$5.99 / GSF
SUBTOTAL		\$4,240,203	

CONTRACTOR'S OVERHEAD & PROFIT	8.0%	\$339,216	\$24.44 / GSF
SUBTOTAL		\$4,579,419	

ESCALATION	0.0%	\$0	\$0.00 / GSF
SUBTOTAL		\$4,579,419	

TOTAL		\$4,579,419	\$329.93 / GSF
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**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 2
ESTIMATE DETAIL**

01 GENERAL REQUIREMENTS

Project Management & Coordination						
personnel / facilities / equipment	18	month	\$20,000.00	\$360,000		\$360,000
01 GENERAL REQUIREMENTS TOTAL						\$360,000

02 EXISTING CONDITIONS

Site Demolition						
site clearing / grub	60,000	sf	\$0.20	\$12,000		
remove existing asphalt paving	35,000	sf	\$0.80	\$28,000		
remove basketball court	4,700	sf	\$0.80	\$3,760		
						\$43,760
Building Demolition						
Demo building	15,630	sf	\$7.00	\$109,410		
hazmat abatement	15,630	sf	\$1.00	\$15,630		
						\$125,040
02 EXISTING CONDITIONS TOTAL						\$168,800

03 CONCRETE

Concrete Foundations & Footings						
excavate & backfill, foundations	165	cy	\$30.00	\$4,950		
forms, foundations	2,980	sf	\$3.00	\$8,940		
rebar, foundations	6,224	lbs	\$0.90	\$5,602		
concrete, foundations	165	cy	\$230.00	\$37,950		
						\$57,442
Concrete Walls, Beams & Columns						
forms, columns	360	sf	\$3.00	\$1,080		
rebar, columns	3,000	lbs	\$0.90	\$2,700		
concrete, columns	33	cy	\$230.00	\$7,590		
						\$11,370
Concrete Slab-on-Grade						
gravel fill	245	cy	\$40.00	\$9,800		
w/m	13,239	sf	\$0.70	\$9,267		
rebar	10,000	lbs	\$0.90	\$9,000		
concrete, 5"	204	cy	\$200.00	\$40,796		
finish / cure	13,239	sf	\$1.00	\$13,239		

Lovettsville Community Center Renovation
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ESTIMATE DETAIL

base cabinet, SS	20	lf	\$350.00	\$7,000	
wall cabinet, SS	20	lf	\$300.00	\$6,000	
countertop	42	lf	\$150.00	\$6,300	
base cabinet	42	lf	\$225.00	\$9,450	
bathroom countertop	16	lf	\$150.00	\$2,400	
					\$35,650

06 WOODS, PLASTICS & COMPOSITES TOTAL \$36,930

07 THERMAL & MOISTURE PROTECTION

Water Proofing					
waterproofing to foundation	2,000	sf	\$5.00	\$10,000	
					\$10,000

Roofing					
TPO roof/flashing	13,608	sf	\$12.00	\$163,296	
					\$163,296

Joint Protection					
sealants	15,000	sf	\$0.40	\$6,000	
					\$6,000

07 THERMAL & MOISTURE PROTECTION TOTAL \$179,296

08 DOORS & WINDOWS

Doors & Frames					
single door	26	ea	\$1,000.00	\$26,000	
double door	4	ea	\$1,785.00	\$7,140	
curtianwall single door	2	ea	\$2,000.00	\$4,000	
curtainwall double door	2	ea	\$3,500.00	\$7,000	
vision window within door	8	ea	\$85.00	\$680	
					\$44,820

Hardware					
single door	28	ea	\$500.00	\$14,000	
double door	6	ea	\$900.00	\$5,400	
					\$19,400

Curtain Walls, Windows & Glazing					
glass curtainwall system	2,700	sf	\$75.00	\$202,500	
glass storefront system	882	sf	\$55.00	\$48,510	
exterior windows	104	sf	\$55.00	\$5,720	

Lovettsville Community Center Renovation
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 Option 2
 ESTIMATE DETAIL

	interior glazing	72	sf	\$40.00	\$2,880	
	coiling window	1	ea	\$2,400.00	\$2,400	
						\$262,010
08 DOORS & WINDOWS TOTAL						\$326,230
<u>09 FINISHES</u>						
Plaster & Gypsum Board						
	metal studs	3,980	sf	\$7.00	\$27,860	
	furring studs	7,974	sf	\$1.75	\$13,955	
	gwb	16,954	sf	\$1.80	\$30,517	
	insulation	2,000	sf	\$1.50	\$3,000	
	ridged insulation	12,074	sf	\$1.50	\$18,111	
	vapor barrier	12,074	sf	\$0.60	\$7,244	
	tape & finish	16,954	sf	\$0.60	\$10,172	
	bulkheads	100	lf	\$35.00	\$3,500	
						\$114,360
Ceilings						
	ACT	8,300	sf	\$3.25	\$26,975	
	paint exposed (gym)	4,384	sf	\$1.00	\$4,384	
						\$31,359
Flooring						
	carpet tile	6,060	sf	\$5.00	\$30,300	
	ceramic tiled floor	754	sf	\$9.00	\$6,786	
	vinyl, tile, (vct)	1,234	sf	\$2.75	\$3,394	
	wood floor, gymnasium	4,262	sf	\$13.00	\$55,406	
	exposed, SC	415	sf	\$2.00	\$830	
						\$96,716
Base						
	CT	325	lf	\$9.00	\$2,925	
	rubber	1,563	lf	\$2.75	\$4,298	
						\$7,223
Wall Finishes						
	paint interior walls	23,000	sf	\$0.70	\$16,100	
	ceramic tiled walls	1,625	sf	\$9.00	\$14,625	
						\$30,725
09 FINISHES TOTAL						\$280,382

**Lovettsville Community Center Renovation
Loudoun County, VA
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Option 2
ESTIMATE DETAIL**

10 SPECIALTIES

Interior Specialties

toilet partitions	6	ea	\$1,200.00	\$7,200	
urinal screen	1	ea	\$350.00	\$350	
grab bars	8	set	\$200.00	\$1,600	
multi roll tissue dispenser	12	ea	\$100.00	\$1,200	
soap dispenser	12	ea	\$50.00	\$600	
mirror	80	sf	\$25.00	\$2,000	
paper towel dispenser	8	ea	\$150.00	\$1,200	
paper towel disposal	8	ea	\$100.00	\$800	
mop/broom holder	1	ea	\$50.00	\$50	
fire extinguisher cabinets	2	ea	\$300.00	\$600	
					\$15,600

10 SPECIALTIES TOTAL

\$15,600

11 EQUIPMENT

Equipment

ice cube machine	1	ea	\$2,500.00	\$2,500	
kitchen hood	1	ea	\$6,500.00	\$6,500	
4 burner range	2	ea	\$5,000.00	\$10,000	
freezer	1	ea	\$8,000.00	\$8,000	
refrigerator	2	ea	\$8,000.00	\$16,000	
dishwasher	1	ea	\$1,200.00	\$1,200	
SS work table	1	ea	\$8,000.00	\$8,000	
basketball backboard	2	ea	\$4,000.00	\$8,000	
scoreboard	1	ea	\$10,000.00	\$10,000	
					\$70,200

11 EQUIPMENT TOTAL

\$70,200

12 FURNISHINGS

Window Shades

interior shades / blinds, manual	986	sf	\$5.00	\$4,930	\$4,930
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12 FURNISHINGS TOTAL

\$4,930

Lovettsville Community Center Renovation
Loudoun County, VA
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Option 2
ESTIMATE DETAIL

21 FIRE SUPPRESSION

Fire Suppression						
	sprinkler system	13,880	sf	\$4.50	\$62,460	
	fire & jockey pump assembly-Not required	1	ls	\$0.00	\$0	
						\$62,460
21 FIRE SUPPRESSION TOTAL						\$62,460

22 PLUMBING

Domestic Water Piping						
	CW / HW / HWR piping	13,880	sf	\$2.80	\$38,864	
						\$38,864
Sanitary & Vent System						
	san/vent pipe	13,880	sf	\$1.70	\$23,596	
						\$23,596
Storm Drainage System						
	storm piping	13,880	sf	\$1.30	\$18,044	
						\$18,044
Plumbing Equipment						
	backflow preventer	1	ea	\$3,500.00	\$3,500	
	water heater	1	ea	\$15,000.00	\$15,000	
	recirculation pump	1	ea	\$3,200.00	\$3,200	
	grease interceptor	1	ea	\$5,000.00	\$5,000	
						\$26,700
Plumbing Fixtures						
	water closet	12	ea	\$800.00	\$9,600	
	lavatory, countertop	6	ea	\$700.00	\$4,200	
	lavatory, wall hung	6	ea	\$800.00	\$4,800	
	bowl sink-rooms	12	ea	\$700.00	\$8,400	
	urinal	2	ea	\$700.00	\$1,400	
	janitor's mop sink	1	ea	\$1,200.00	\$1,200	
	kitchen sink-double sink	1	ea	\$2,300.00	\$2,300	
	EW-C-double	1	ea	\$3,500.00	\$3,500	
	shower	2	ea	\$2,800.00	\$5,600	
	floor drains	9	ea	\$350.00	\$3,150	
	roof drains	10	ea	\$425.00	\$4,250	
						\$48,400
Other Plumbing						
	penetrations/firestopping	13,880	sf	\$0.50	\$6,940	

**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 2
ESTIMATE DETAIL**

testing	24	hrs	\$120.00	\$2,880	
					\$9,820
22 PLUMBING TOTAL					\$165,424

23 HVAC

HVAC Air Distribution					
ductwork, galvanized, allow .7 lbs per sf	9,716	lbs	\$8.00	\$77,728	
ductwork linings/insulation	6,801	sf	\$2.50	\$17,003	
diffusers	37	ea	\$150.00	\$5,550	
mechanical accessories/diffusers	13,880	sf	\$2.00	\$27,760	
					\$128,041

HVAC Equipment					
AHU-1	26	ton	\$1,700.00	\$44,200	
AHU-2	12	ton	\$1,700.00	\$20,400	
AHU-3	11	ton	\$1,700.00	\$18,700	
AHU-4	11	ton	\$1,700.00	\$18,700	
exhaust fans-allow	3,500	cfm	\$2.50	\$8,750	
cabinet unit heaters	2	ea	\$1,500.00	\$3,000	
unit heaters	2	ea	\$850.00	\$1,700	
VFD	8	ea	\$3,000.00	\$24,000	
VAV box with electric reheat	9	ea	\$1,200.00	\$10,800	
thermostat	9	ea	\$350.00	\$3,150	
5 ton DX unit	1	ea	\$6,500.00	\$6,500	
					\$159,900

Other HVAC					
vibration controls	13,880	sf	\$0.30	\$4,164	
controls, ddc	1	ls	\$60,000.00	\$60,000	
rigging	1	ls	\$5,000.00	\$5,000	
firestopping/penetrations	13,880	sf	\$0.50	\$6,940	
testing & balancing	80	hrs	\$120.00	\$9,600	
mechanical general conditions	10	mths	\$5,000.00	\$50,000	
					\$135,704

23 HVAC TOTAL					\$423,645
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26 ELECTRICAL

Electrical Equipment					
panels	6	ea	\$2,200.00	\$13,200	
transformers	2	ea	\$4,000.00	\$8,000	
switchboard, 1600a	1	ea	\$16,000.00	\$16,000	

**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 2
ESTIMATE DETAIL**

	feeders/conduit	13,880	sf	\$1.60	\$22,208	\$59,408
Electrical Power Devices	power devices	13,880	sf	\$5.00	\$69,400	\$69,400
Interior Lighting	light fixtures, w/ conduit & wire	13,880	sf	\$7.00	\$97,160	\$97,160
Other Electrical	electrical general conditions	10	mths	\$5,000.00	\$50,000	
	lightning protection/grounding	13,880	sf	\$0.50	\$6,940	
	firestopping/penetrations	13,880	sf	\$0.50	\$6,940	
	testing	24	hrs	\$120.00	\$2,880	
	mechanical equipment connections	13,880	sf	\$1.00	\$13,880	\$80,640
26 ELECTRICAL TOTAL						\$306,608
<u>27 COMMUNICATIONS</u>						
Data / Voice Communications	telecom / data system, rough in only	13,880	sf	\$1.30	\$18,044	\$18,044
Audio-Video Communications	AV system, rough in only	13,880	sf	\$0.50	\$6,940	\$6,940
27 COMMUNICATIONS TOTAL						\$24,984
<u>28 ELECTRONIC SAFETY & SECURITY</u>						
Electronic Security	security system, rough in only, allow	13,880	sf	\$0.40	\$5,552	\$5,552
Electronic Fire Alarm	fire alarm system	13,880	sf	\$3.00	\$41,640	\$41,640
28 ELECTRONIC SAFETY & SECURITY TOTAL						\$47,192

**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Option 2
ESTIMATE DETAIL**

31 EARTHWORK

Earth Moving						
	cut to fill	8,100	cy	\$3.00	\$24,300	
	spread remaining dirt not used	4,500	cy	\$1.00	\$4,500	
	prep building pad	13,880	sf	\$0.80	\$11,104	
						\$39,904
Erosion Control						
	construction entrance	1	ea	\$3,000.00	\$3,000	
	silt fence	1,200	lf	\$5.00	\$6,000	
	tree protection	400	lf	\$5.00	\$2,000	
	erosion control maintenance	4	mths	\$1,500.00	\$6,000	
						\$17,000
31 EARTHWORK TOTAL						\$56,904

32 EXTERIOR IMPROVEMENTS

Paving						
	asphalt road	57,000	sf	\$4.00	\$228,000	
	curb	400	lf	\$18.00	\$7,200	
	stripping	57,000	sf	\$0.20	\$11,400	
	concrete sidewalk, 4"	5,500	sf	\$6.00	\$33,000	
	dumpster pad	400	ea	\$10.00	\$4,000	
						\$283,600
Exterior Lighting						
	street lighting, 30' pole	22	ea	\$4,500.00	\$99,000	
	wire/trenching	2,000	lf	\$8.00	\$16,000	
						\$115,000
Site Improvements						
	basketball court surfacing	4,700	sf	\$6.00	\$28,200	
	fence for basketball court	2,880	sf	\$5.00	\$14,400	
	basketball hoop	2	ea	\$3,000.00	\$6,000	
						\$48,600
Planting						
	landscaping	1	ls	\$15,000.00	\$15,000	
						\$15,000
32 EXTERIOR IMPROVEMENTS TOTAL						\$462,200

Lovettsville Community Center Renovation
Loudoun County, VA
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Option 2
ESTIMATE DETAIL

33 UTILITIES

Water Utilities

water line, steel piping 2"	450	lf	\$35.00	\$15,750	
connect to existing water line	1	loc	\$1,500.00	\$1,500	
excavate/backfill	250	cy	\$30.00	\$7,500	
					\$24,750

Sanitary Sewer System

pvc piping, 4"	125	lf	\$30.00	\$3,750	
HDPE 1.5" pipe/excavation	350	lf	\$15.00	\$5,250	
excavation/backfill, to the above	69	cy	\$30.00	\$2,083	
connect to existing	1	loc	\$1,500.00	\$1,500	
					\$12,583

Storm Water, Site

storm water management	12,000	sf	\$3.00	\$36,000	
					\$36,000

Electrical Service

upgrade utility transformer	by others	ea	\$0.00	\$0	
upgrade primary feeders to transformer	200	lf	\$45.00	\$9,000	
					\$9,000

33 UTILITIES TOTAL

\$82,333

Add Alternates

**Lovettsville Community Center Renovation
Loudoun County, VA
Preliminary Concept Design Cost Estimate
Add Alternates**

DIVISION SUMMARY

Alternate #1-Pool House	\$91,320
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Alternate #2-Geothermal Roof Top Units	\$247,200
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Alternate #3-VRF System	\$125,280
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Alternate #4-Fire Pump Room (As Necessary)	\$120,000
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**Lovettsville Community Center Renovation
Loudoun County, VA
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Add Alternates
ESTIMATE DETAIL**

Alternate #1-Pool House

Doors & Frames	fiber reinforced doors	2	ea	\$1,200.00	\$2,400	\$2,400
Hardware	single door	2	ea	\$500.00	\$1,000	\$1,000
Wall Finishes	paint pool house	1	ls	\$5,000.00	\$5,000	\$5,000
Interior Specialties	toilet partitions	8	ea	\$1,200.00	\$9,600	
	misc. toilet accessories	1	ls	\$1,500.00	\$1,500	\$11,100
Equipment	pool house filtration system	1	ea	\$25,000.00	\$25,000	\$25,000
Electrical Equipment	new panel	2	ea	\$2,500.00	\$5,000	
	new disconnect switch	2	ea	\$1,000.00	\$2,000	\$7,000
Interior Lighting	energy efficient light fixtures	15	ea	\$300.00	\$4,500	
	occupancy sensors	6	ea	\$250.00	\$1,500	
	emergency battery pack	6	ea	\$285.00	\$1,710	
	conduit	270	lf	\$5.50	\$1,485	
	wire	810	lf	\$0.50	\$405	\$9,600
Electronic Fire Alarm	fire alarm system	1	ls	\$15,000.00	\$15,000	\$15,000
Subtotal Total Alternate #1-Pool House						\$76,100
Markups						20%
Total-Alternate #1-Pool House						\$91,320

Lovettsville Community Center Renovation
 Loudoun County, VA
 Preliminary Concept Design Cost Estimate
 Add Alternates
 ESTIMATE DETAIL

Alternate #2-Geothermal Roof Top Units

HVAC Sitework						
	geothermal wells	45	ea	\$3,000.00	\$135,000	
	piping to AHU	1	ls	\$60,000.00	\$60,000	
						\$195,000

HVAC Equipment						
	AHU-1	26	ton	\$1,300.00	\$33,800	
	AHU-2	12	ton	\$1,300.00	\$15,600	
	AHU-3	11	ton	\$1,300.00	\$14,300	
	AHU-4	11	ton	\$1,300.00	\$14,300	
	glycol pump	2	ea	\$9,000.00	\$18,000	
	makeup glycol system	1	ls	\$7,000.00	\$7,000	
	valves	1	ls	\$10,000.00	\$10,000	
						\$113,000

Deduct Base Bid						
	AHU-1	26	ton	-\$1,700.00	-\$44,200	
	AHU-2	12	ton	-\$1,700.00	-\$20,400	
	AHU-3	11	ton	-\$1,700.00	-\$18,700	
	AHU-4	11	ton	-\$1,700.00	-\$18,700	
						-\$102,000

Subtotal Total Alternate #2-Geothermal Roof Top Units						\$206,000
Markups						20%
Total-Alternate #2-Geothermal Roof Top Units						\$247,200

Alternate #3-VRF System

HVAC Equipment						
	FCU	28	ea	\$2,000.00	\$56,000	
	condensers	3	ea	\$6,000.00	\$18,000	
	piping	1	ls	\$45,000.00	\$45,000	
	added controls	1	ls	\$20,000.00	\$20,000	
	outside air unit	1	ls	\$30,000.00	\$30,000	
	AHU-3	11	ton	\$1,700.00	\$18,700	
	AHU-4	11	ton	\$1,700.00	\$18,700	
						\$206,400

Lovettsville Community Center Renovation
 Loudoun County, VA
 Preliminary Concept Design Cost Estimate
 Add Alternates
 ESTIMATE DETAIL

Deduct Base Bid

AHU-1	26	ton	-\$1,700.00	-\$44,200	
AHU-2	12	ton	-\$1,700.00	-\$20,400	
AHU-3	11	ton	-\$1,700.00	-\$18,700	
AHU-4	11	ton	-\$1,700.00	-\$18,700	
					-\$102,000

Subtotal Total Alternate #3-VRF System

\$104,400

Markups

20%

Total-Alternate #3-VRF System

\$125,280

Alternate #4-Fire Pump Room (As Necessary)

8X10 pump room	1	ls	\$35,000.00	\$35,000	
generator	1	ls	\$65,000.00	\$65,000	
					\$100,000

Subtotal Total Alternate #4-Fire Pump Room

\$100,000

Markups

20%

Total-Alternate #4-Fire Pump Room

\$120,000

END OF REPORT



Appendix B

Civil Site Plans and Cut & Fill Diagrams

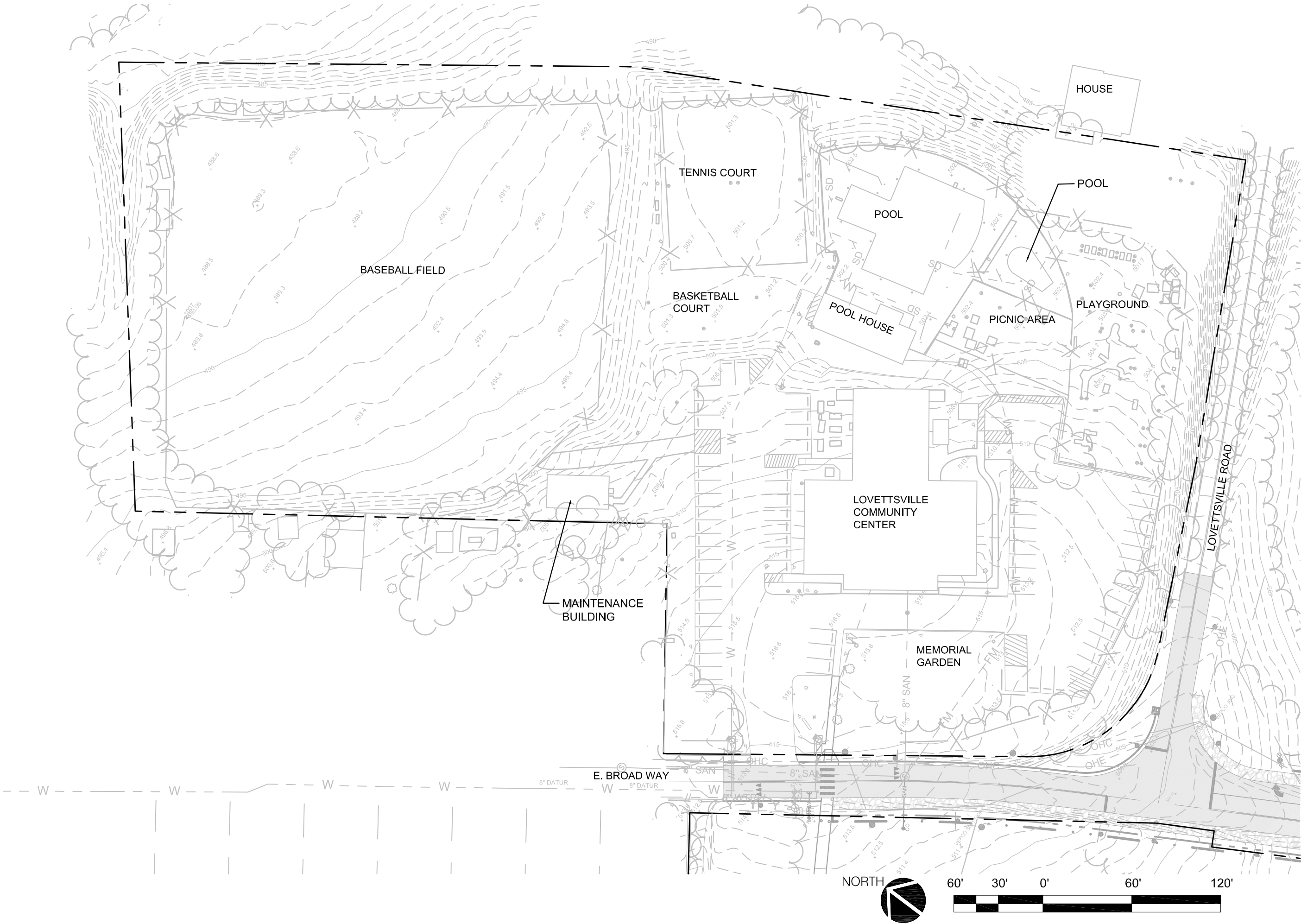


LSY 11034

LOUDOUN COUNTY, VA
LOVETTSTVILLE COMMUNITY CENTER RENOVATION

C.1

EXISTING
CONDITIONS
PLAN





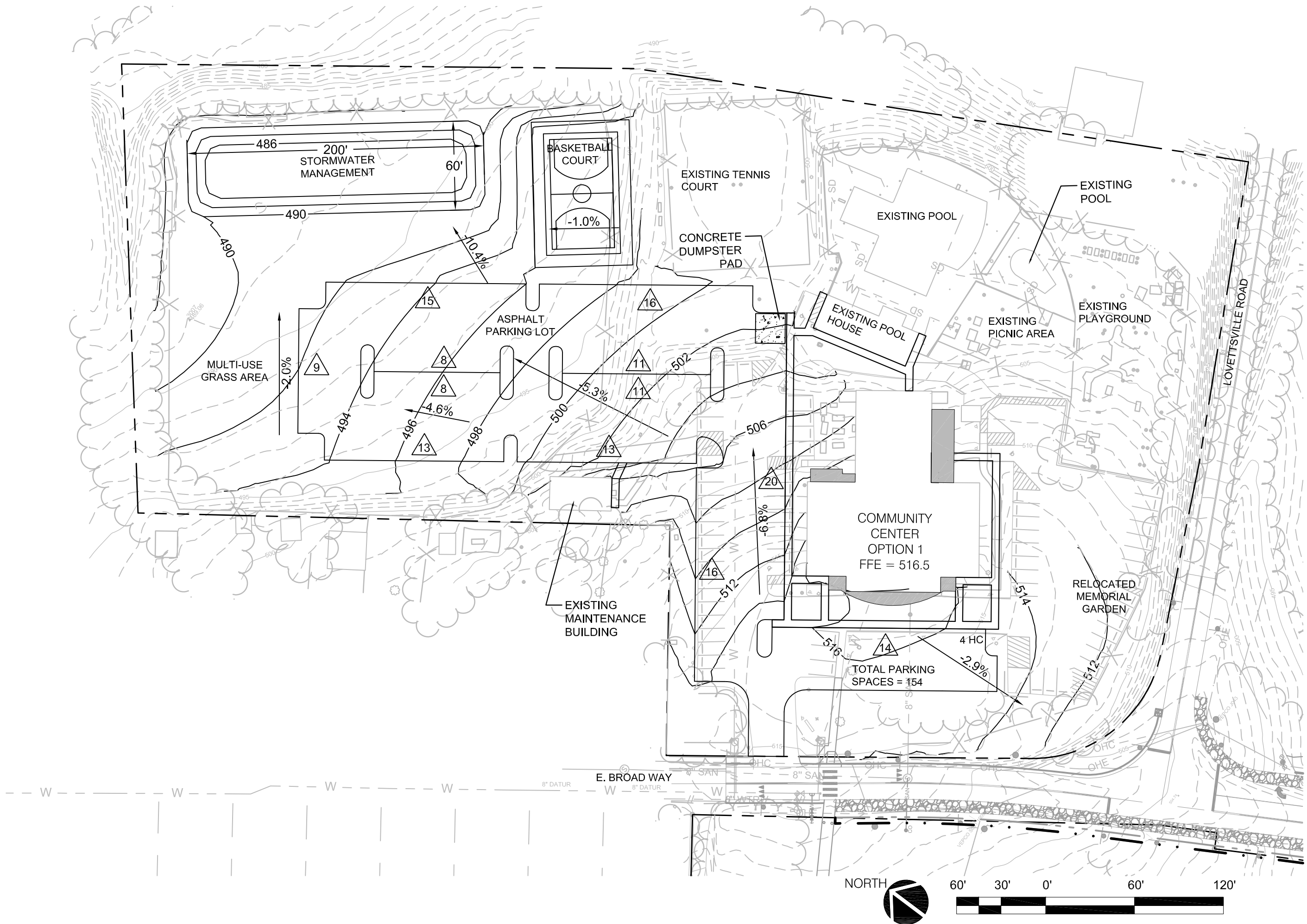
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LOUDOUN COUNTY, VA

LOVETTSTVILLE COMMUNITY CENTER RENOVATION

C.2

OPTION 1 SITE
PLAN





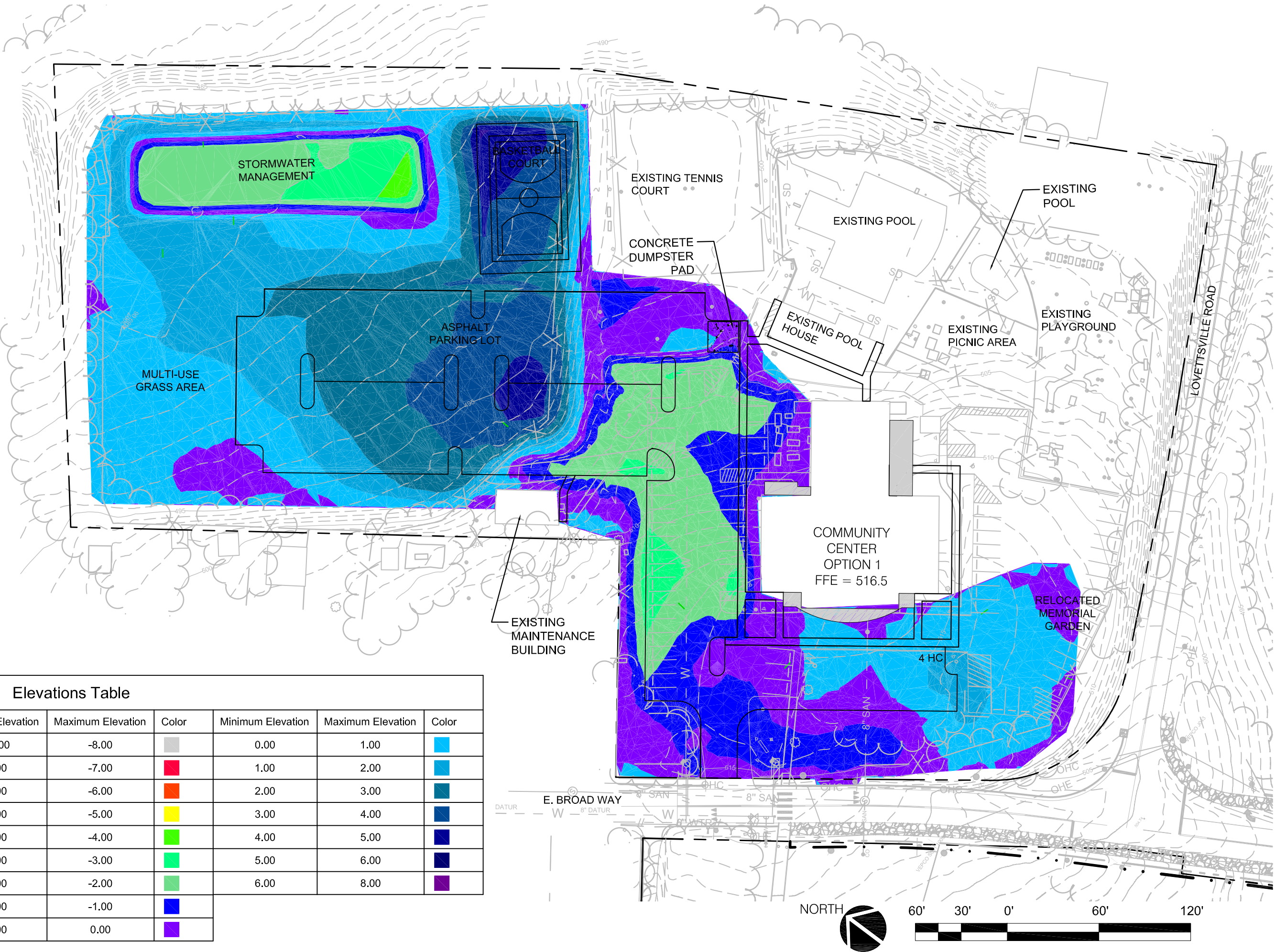
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LOUDOUN COUNTY, VA
LOVETTSTVILLE COMMUNITY CENTER RENOVATION

C.3

OPTION 1
CUT-FILL PLAN

Elevations Table					
Minimum Elevation	Maximum Elevation	Color	Minimum Elevation	Maximum Elevation	Color
-10.00	-8.00	Gray	0.00	1.00	Light Blue
-8.00	-7.00	Red	1.00	2.00	Blue
-7.00	-6.00	Orange	2.00	3.00	Dark Blue
-6.00	-5.00	Yellow	3.00	4.00	Dark Blue
-5.00	-4.00	Light Green	4.00	5.00	Dark Blue
-4.00	-3.00	Green	5.00	6.00	Dark Blue
-3.00	-2.00	Light Green	6.00	8.00	Purple
-2.00	-1.00	Blue			
-1.00	0.00	Purple			



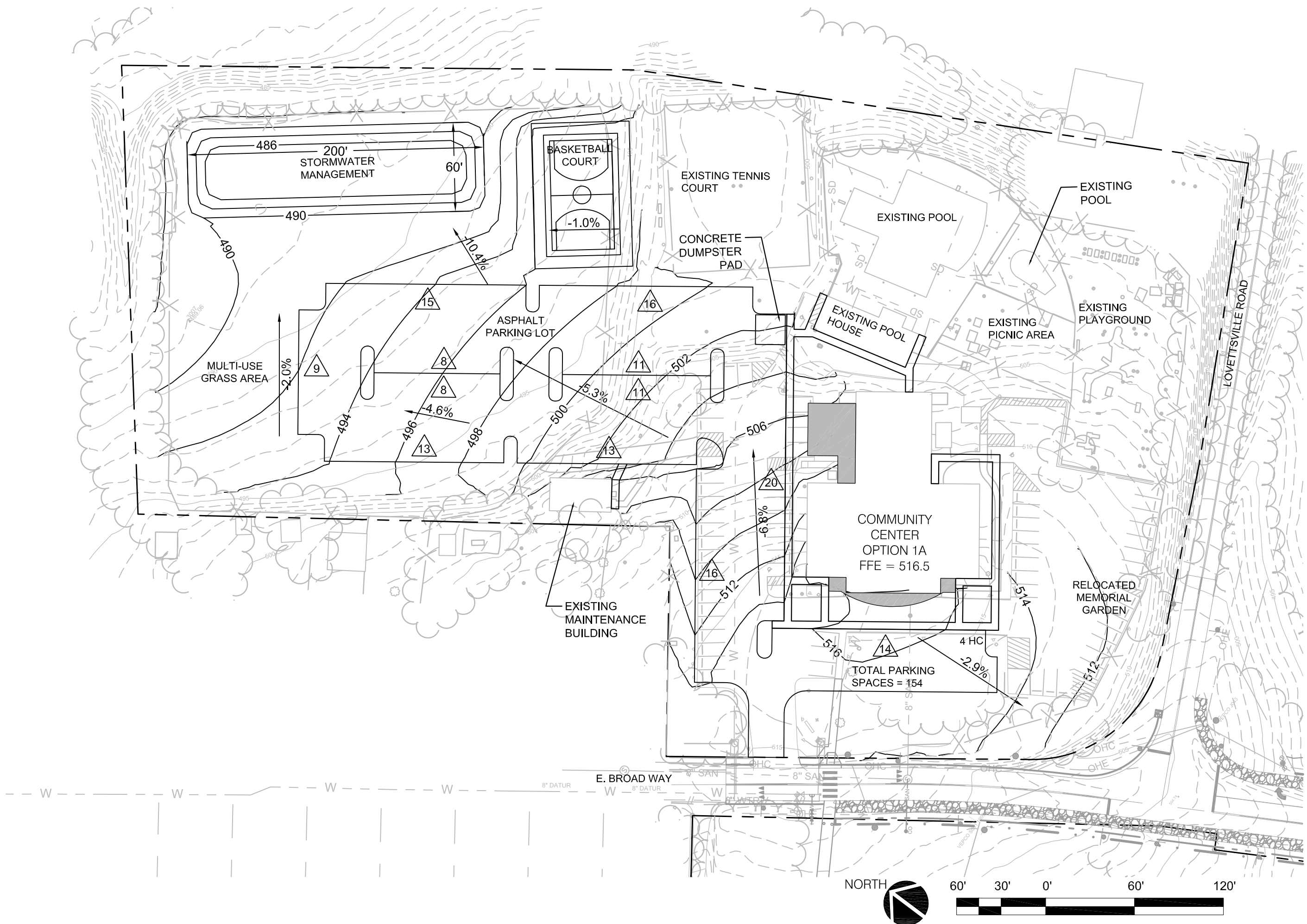


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LOUDOUN COUNTY, VA
LOVETTSTVILLE COMMUNITY CENTER RENOVATION

C.4

OPTION 1A SITE
PLAN





LSY 11034

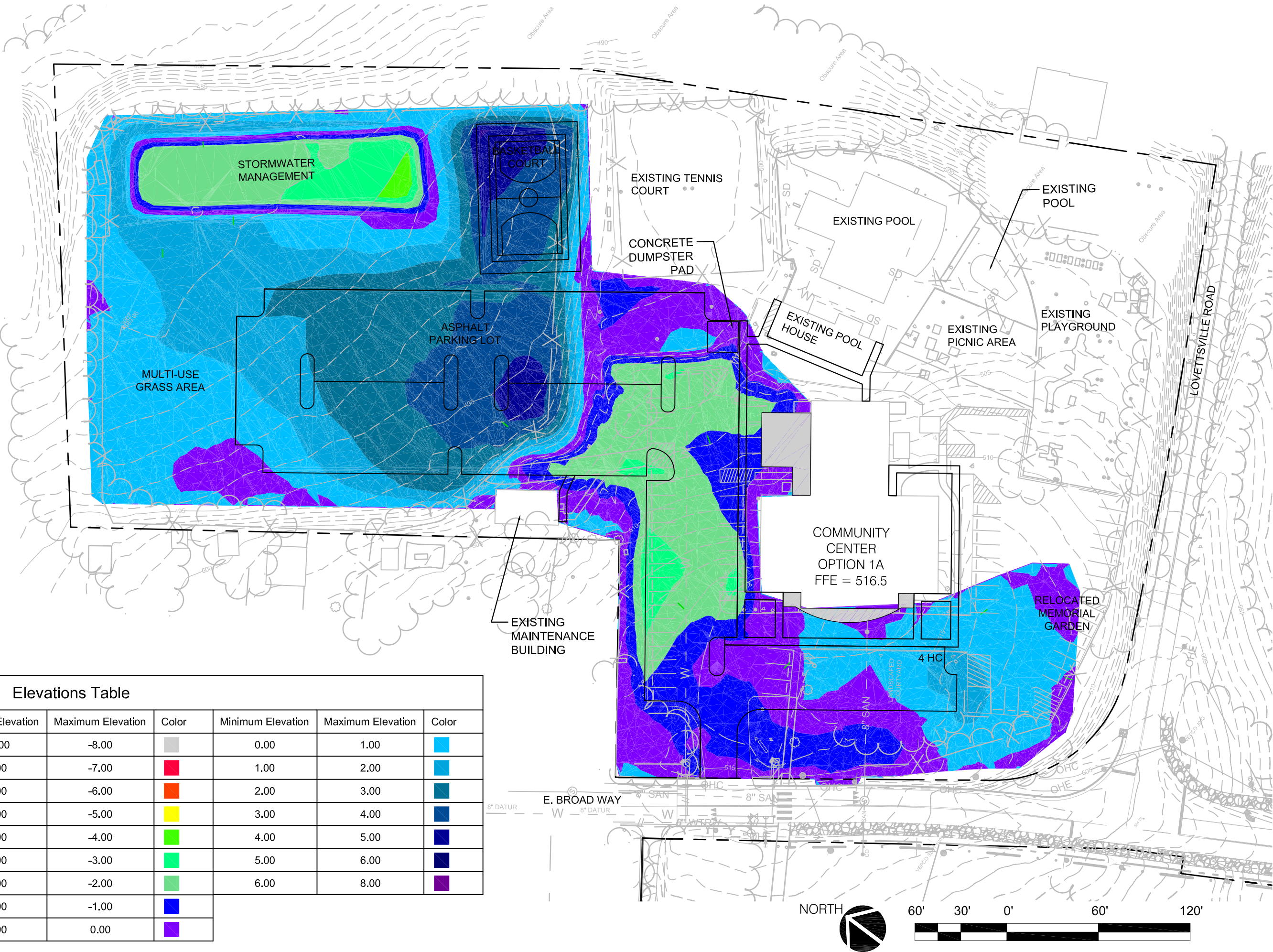
LOUDOUN COUNTY, VA

LOVETTSTVILLE COMMUNITY CENTER RENOVATION

C.5

OPTION 1A
CUT-FILL PLAN

Elevations Table					
Minimum Elevation	Maximum Elevation	Color	Minimum Elevation	Maximum Elevation	Color
-10.00	-8.00	Gray	0.00	1.00	Light Blue
-8.00	-7.00	Red	1.00	2.00	Blue
-7.00	-6.00	Orange	2.00	3.00	Dark Blue
-6.00	-5.00	Yellow	3.00	4.00	Dark Blue
-5.00	-4.00	Light Green	4.00	5.00	Dark Blue
-4.00	-3.00	Green	5.00	6.00	Dark Blue
-3.00	-2.00	Light Green	6.00	8.00	Purple
-2.00	-1.00	Blue			
-1.00	0.00	Purple			



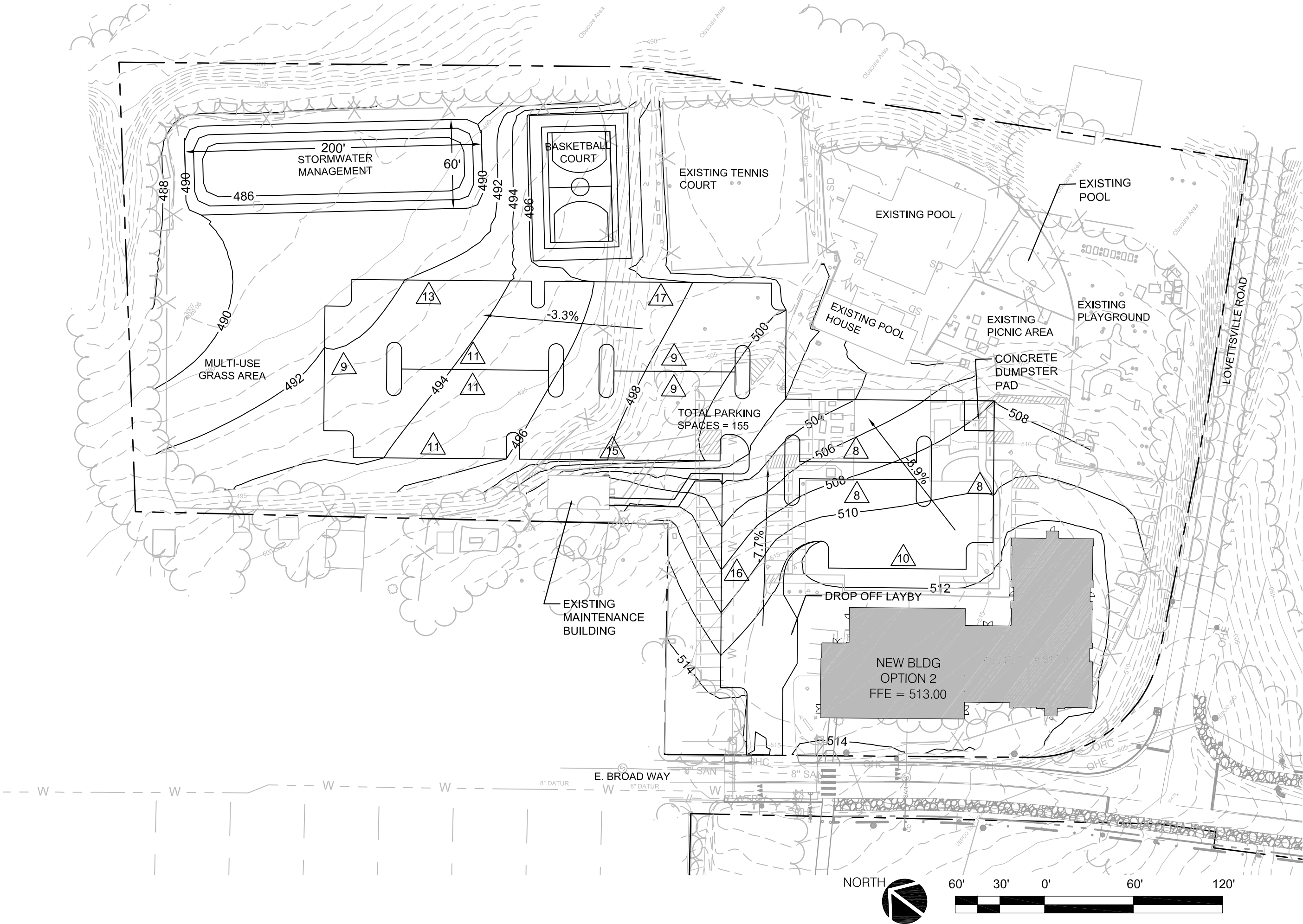


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LOUDOUN COUNTY, VA
LOVETTSTVILLE COMMUNITY CENTER RENOVATION

C.6

OPTION 2 SITE
PLAN





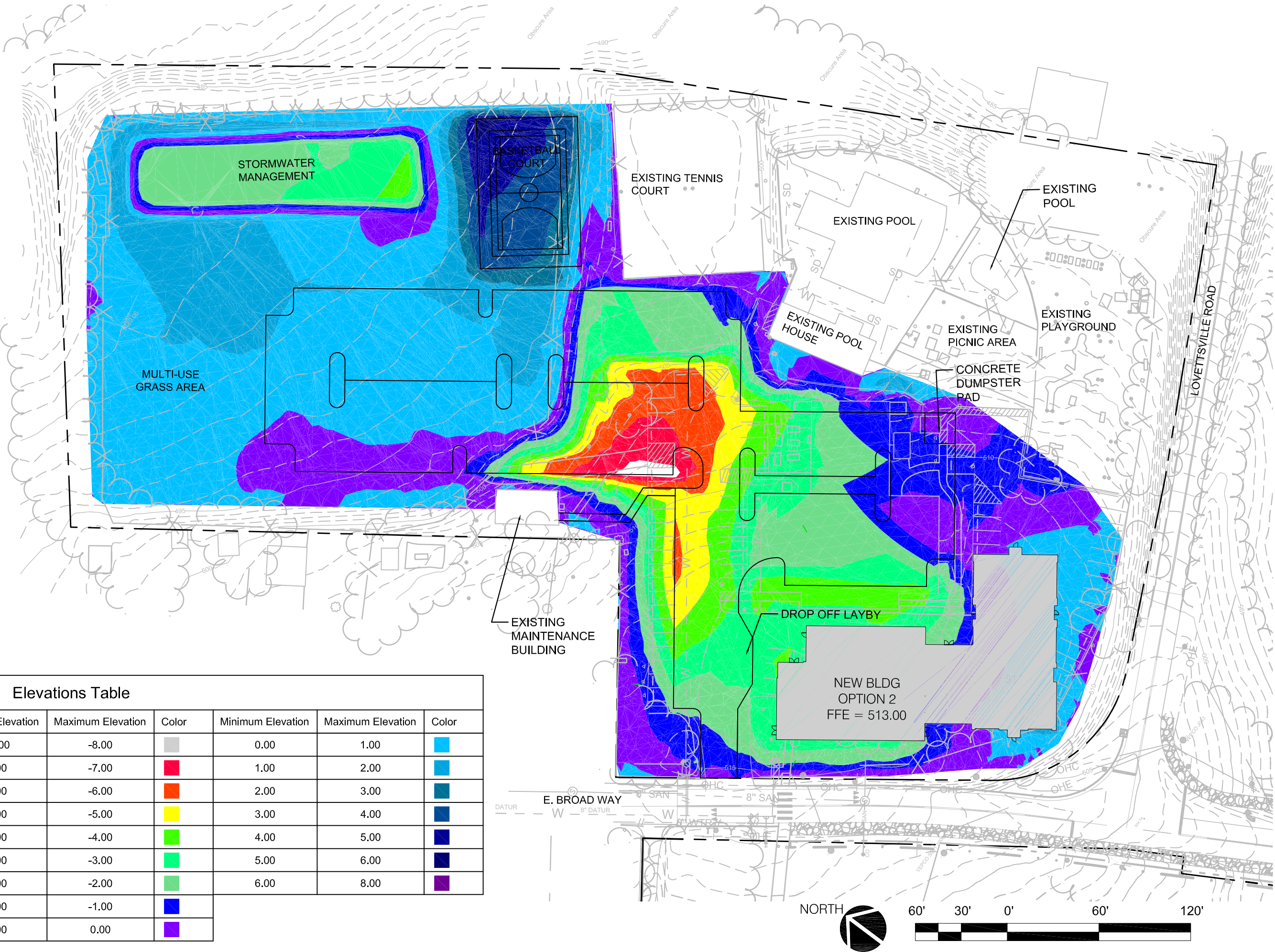
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LOUDOUN COUNTY, VA
LOVETTSTVILLE COMMUNITY CENTER RENOVATION

C.7

OPTION 2
CUT-FILL PLAN

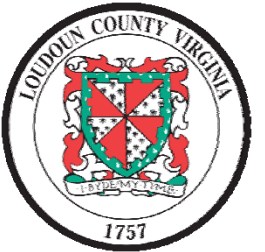
Elevations Table					
Minimum Elevation	Maximum Elevation	Color	Minimum Elevation	Maximum Elevation	Color
-10.00	-8.00	Gray	0.00	1.00	Light Blue
-8.00	-7.00	Red	1.00	2.00	Blue
-7.00	-6.00	Orange	2.00	3.00	Dark Blue
-6.00	-5.00	Yellow	3.00	4.00	Dark Blue
-5.00	-4.00	Light Green	4.00	5.00	Dark Blue
-4.00	-3.00	Green	5.00	6.00	Dark Blue
-3.00	-2.00	Light Green	6.00	8.00	Purple
-2.00	-1.00	Blue			
-1.00	0.00	Purple			





Appendix C

Design Options #1, #1A and #2 Floor Plans and Perspectives

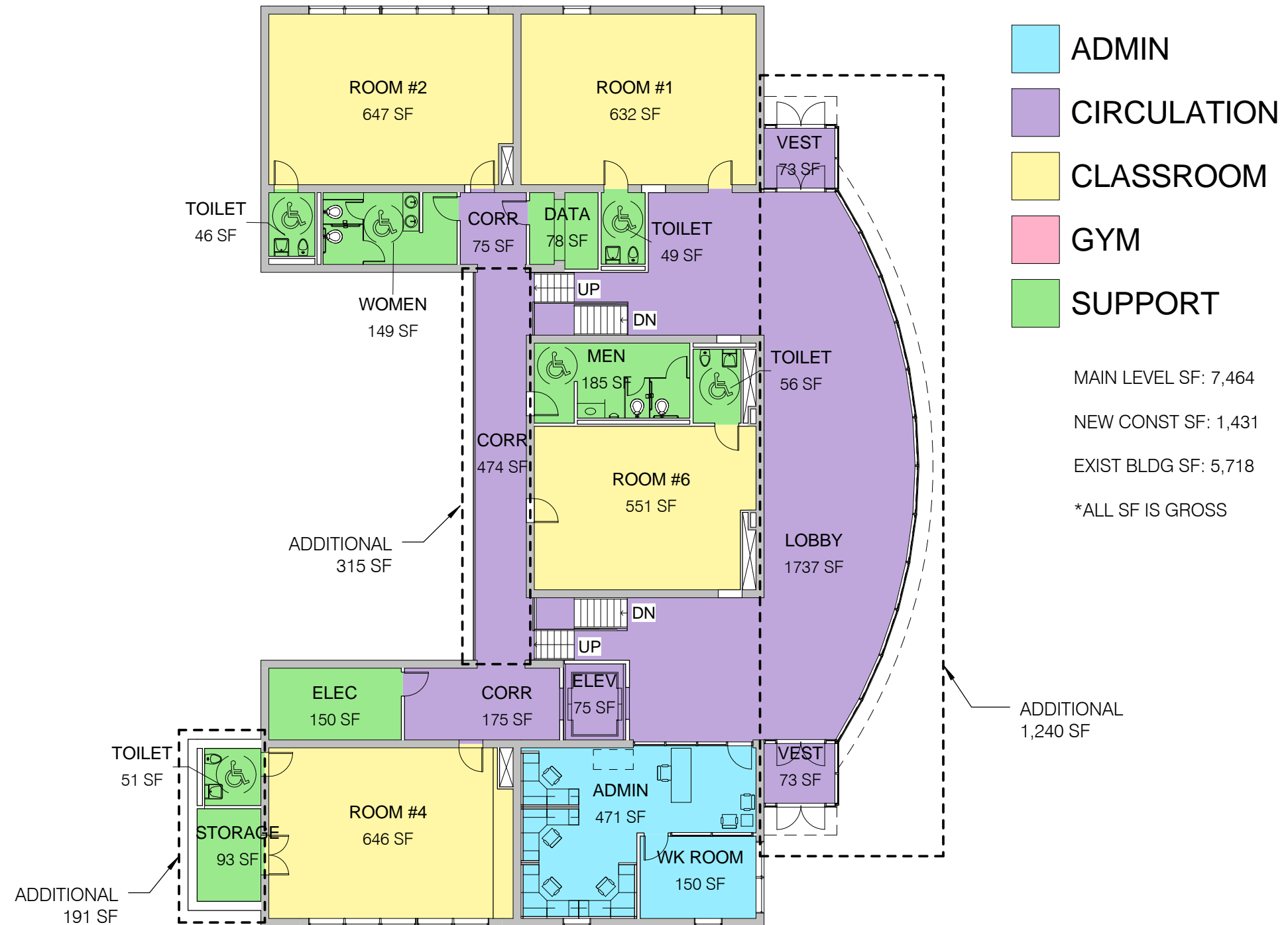


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LOUDOUN COUNTY, VA
LOVETTSTVILLE COMMUNITY CENTER RENOVATION

1.1

OPTION 1 MAIN
LEVEL

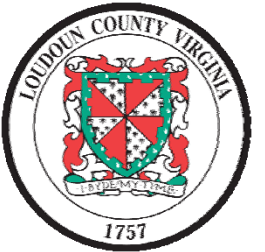


1
1.1

MAIN LEVEL FLOOR PLAN - RENOVATION OPTION 1

1/16" = 1'-0"





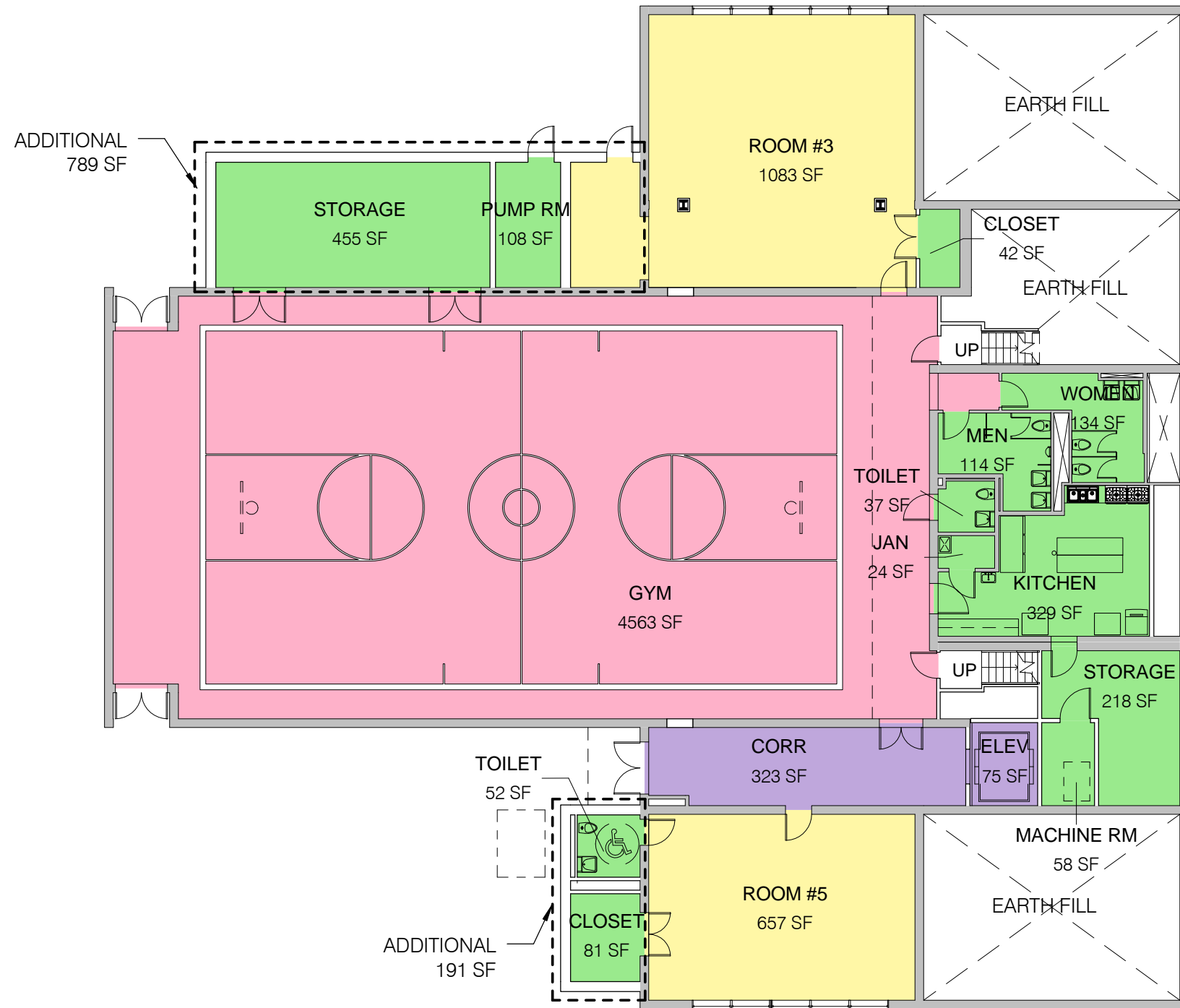
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LOUDOUN COUNTY, VA

LOVETTSTVILLE COMMUNITY CENTER RENOVATION

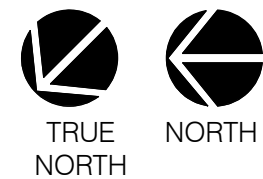
1.2

OPTION 1
LOWER LEVEL



- ADMIN
- CIRCULATION
- CLASSROOM
- GYM
- SUPPORT

LOWER LEVEL SF: 9,154
NEW CONST SF: 980
EXIST LEVEL SF: 8,174
*ALL SF IS GROSS



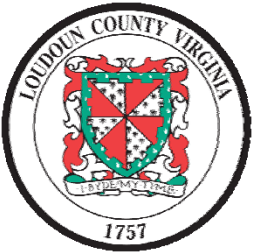
1 LOWER LEVEL FLOOR PLAN - RENOVATION OPTION 1
1.2 1/16" = 1'-0"



1 3D VIEW OF ENTRY
1.3 NTS



2 3D VIEW OF LOBBY - INTERIOR
1.3 NTS

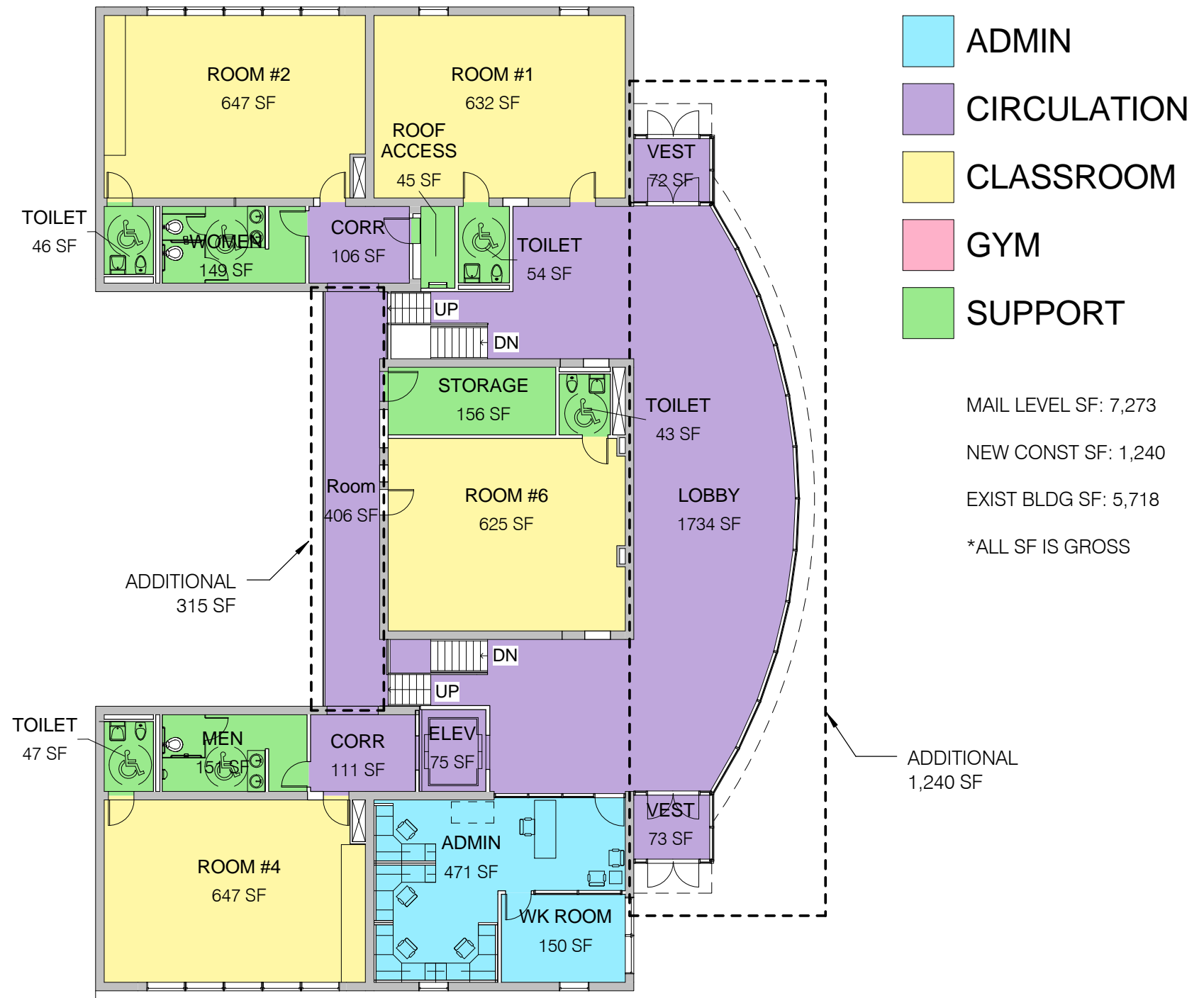


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LOUDOUN COUNTY, VA
LOVETTSTVILLE COMMUNITY CENTER RENOVATION

1A.1

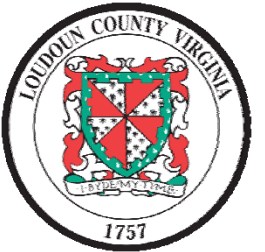
OPTION 1A
MAIN LEVEL



1
1A.1

MAIN LEVEL FLOOR PLAN - RENOVATION OPTION 1A

1/16" = 1'-0"



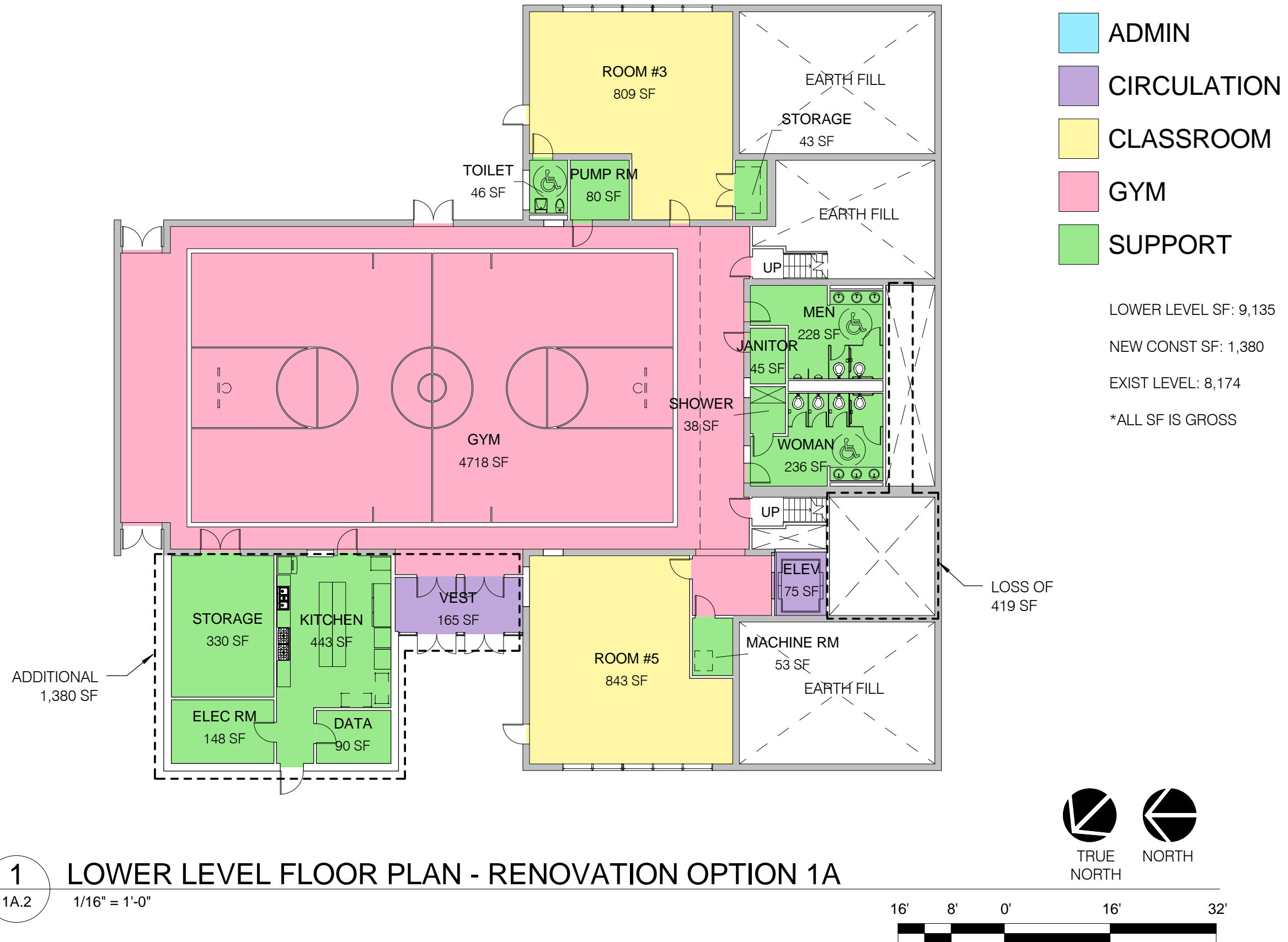
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LOUDOUN COUNTY, VA

LOVETTSTVILLE COMMUNITY CENTER RENOVATION

1A.2

OPTION 1A
LOWER LEVEL



1
1A.2

LOWER LEVEL FLOOR PLAN - RENOVATION OPTION 1A

1/16" = 1'-0"



1 3D VIEW OF LOBBY ADDITION - OPT 1A
1A.3 12" = 1'-0"



2 3D VIEW OF NEW ADDITION - OPT 1A
1A.3 12" = 1'-0"



LSY 11034

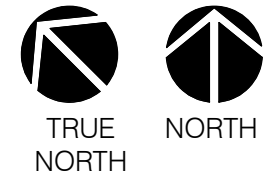
LOUDOUN COUNTY, VA
LOVETTSTVILLE COMMUNITY CENTER RENOVATION

2.1

OPTION 2 -
FLOOR PLAN

- ADMIN
- CIRCULATION
- CLASSROOM
- GYM
- SUPPORT

GROSS SF: 14,700



1 OPTION 2 - FLOOR PLAN
2.1 1/16" = 1'-0"



1 3D VIEW OPTION 2 - FRONT
2.2 NTS



2 3D VIEW OPTION 2 - STREET VIEW
2.2 12" = 1'-0"